JULY 1956

The Controller

LONG-RANGE PLANNING
Robert C. Tait

THE OPERATING BUDGET
John M. Thompson

VERIFICATION OF CHARGES FOR ELECTRIC SERVICES
Fred A. Wahlers

THE CONTROLLER'S ROLE IN COLLECTIVE BARGAINING
Maynard F. Carter

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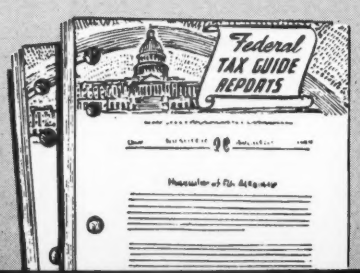

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1. To establish, coordinate and maintain through authorized management, an integrated plan for the control of operations. Such a plan would provide, to the extent required in the business, cost standards, expense budgets, sales forecasts, profit planning, and programs for capital investment and financing, together with the necessary procedures to effectuate the plan.

2. To measure performance against approved operating plans and standards, and to report and interpret the results of operations to all levels of management. This function includes the design, installation and maintenance of accounting and cost systems and records, the determination of accounting policy and the compilation of statistical records as required.

3. To measure and report on the validity of the objectives of the business and on the effectiveness of its policies, organization structure and procedures in attaining those objectives. This includes consulting with all segments of management responsible for policy or action concerning any phase of the operation of the business as it relates to the performance of this function.

4. To report to government agencies, as required, and to supervise all matters relating to taxes.

5. To interpret and report on the effect of external influences on the attainment of the objectives of the business. This function includes the continuous appraisal of economic and social forces and of governmental influences as they affect the operations of the business.

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The Controller

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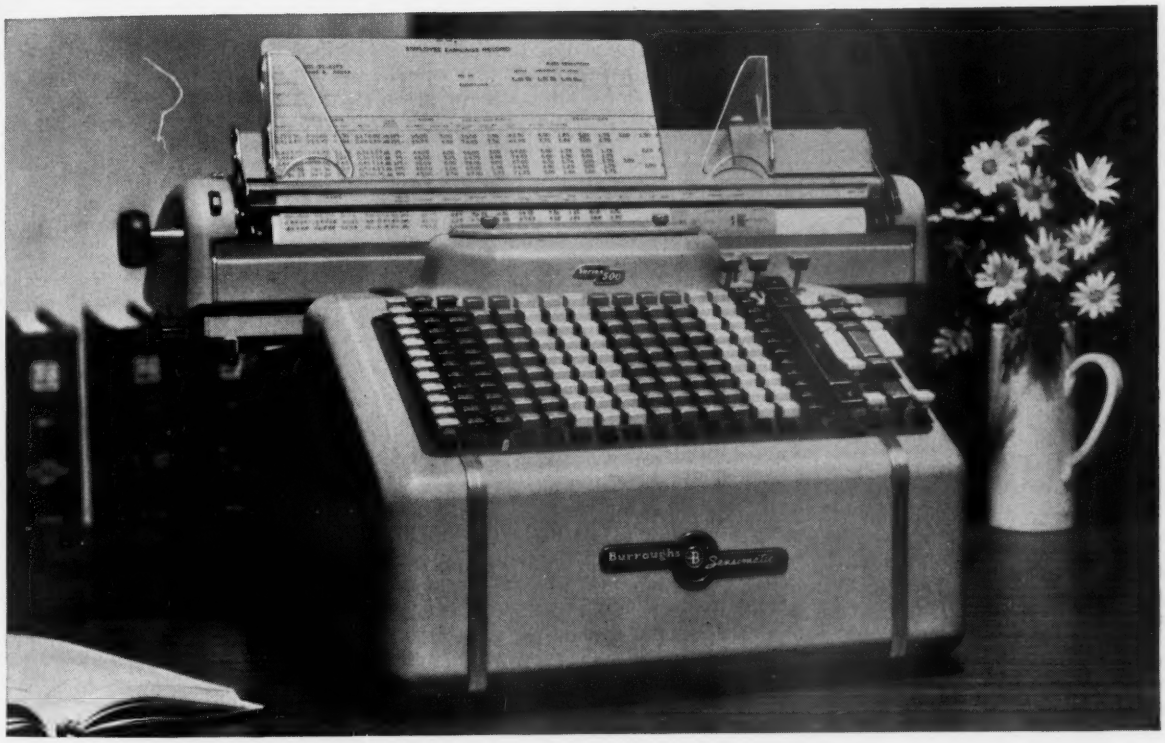
Or Small like Dy-Dee Wash, Detroit



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MORE ABOUT BILLIARD BALLS

Readers, THE CONTROLLER:

Here is the original problem as printed in the columns of the May issue of THE CONTROLLER:

OPERATION LOGIC

Editors, THE CONTROLLER:

A couple of our boys have carefully studied the new Port Authority Case Study and they are most complimentary.

However, they have been plaguing me for the solution to the problem shown in Exhibit 6 concerning the 12 billiard balls. They are arguing that there is no answer. I don't know it either but I thought if there was, you would be happy to pass it along so I could maintain my self-respect. I always contend that if I don't know the answer I know the guy who does so I'll appreciate your early solution.

HAROLD A. KETCHUM
Vice President and Controller
Fasco Industries, Inc.
Rochester, N. Y.

We don't know the answer but perhaps some of our readers do. The problem is reprinted from page 41 of "Electronics in Business: A Case Study in Planning at the Port of New York Authority," *published by Controllership Foundation.*

We understand that more than 20 admissible solutions have been developed. As soon as we get a good solution we will be glad to publish it. —*The Editors*

The Problem of the Twelve Billiard Balls

This is a test of logic. There are no tricks or gimmicks. We want to see whether you can think a difficult problem through, arrive at a solution and put it down on paper in a clear, understandable, and orderly way.

There are a dozen billiard balls, identical in size, identical in appearance, but not identical in weight. One of them is slightly off, either heavier or lighter, you don't know which. You are given a pair of balance scales, the kind that have no weight indicator, merely two balanced pans. "Use these any way you wish," are the instructions, "but you can't use them more than three times."

Can you find the off-weight ball in the identical-looking dozen? And tell whether it is heavier or lighter than the rest?

The billiard balls are numbered 1 to 12. To begin, you might put 1, 2, 3, and 4 in one pan of the scales; 5, 6, 7, and 8 in the other. If they balance, then the short-weight or long-weight ball is one of the others. So you weigh 9, 10, and 11 in one pan, against 1, 2, and 3 in the other. If they balance, then the off-weight ball is clearly Number 12. So you just weigh that one against ball Number 1, and there you have it: you know whether it is lighter or heavier.

But of course things may not work out just like that. In your second weighing, 9, 10, and 11 weighed against 1, 2, and 3 may not balance. How would you proceed in that annoying case? Worse still, the eight balls you weigh the first time may not balance. Then you've got to find the off ball among those eight—and you can use the scales only twice more. That's worse and more of it. Still, it can be done.

You have two hours for this problem. Even if you don't arrive at the final answer, turn in all your scrap paper. We are interested in how you approached the problem.

(If you have read this far, tell your secretary to take your phone calls and shut the door to your office!)

The editors are behind the eight ball because they have spent the last few weeks reading scientific and technical solutions to the problem instead of editing light and airy manuscripts on depreciation, pricing policies, etc. Dare we say ad infinitum ad nauseum?

At any rate we have received a number of solutions and we are convinced that controllers are not only intelligent—but have a sense of humor.* The covering letters, in themselves, made for delightful evening reading.

Our own attempts to solve the problem (we used the honor system and didn't peek at any of the early solutions) got off to a roaring start because John D. Weber, controller, the Abbott Ball Company, sent us a dozen 5/8" steel balls—one of which is said to be off-weight. We found, however, that we didn't have a pan scale so we can't test the solutions, let alone tell whether one of the balls is off-weight.

Ignoring the facetious solutions, there appear to be four major approaches, but we are not certain that the judges would allow one of these. Space does not permit us to print all the solutions, so we are using one representing each approach.

> Please note that we haven't said they are all correct.

In the first method, shown on page 338, there were two schools of thought as to the number of balls used in the second weighing—half of the writers used three balls in each pan while the other half used four balls—so we are printing one typical of each school of thought (Turn to page 338).

Right now, we are confused and to compound it we will add something about the number of possible solutions. Those who used Method 1-A had eight different combinations for the second weighing, while those who used Method 1-B had six different combinations.—*The Editors en masse*

•

* Here are some of the comments noted in the covering letters:

"Once upon a time there were twelve billiard balls and 5,000 frustrated controllers. You never can tell the far-reaching effects this problem may have on the economy of the country. Controllers neglecting their duties, no time to buy automobiles, and buying scales and billiard balls."

"You have no doubt by now received many 'billiard ball' solutions, but just so I can get back to my regular duties and forget the whole thing here is one solution. If there are only 20 acceptable answers I hope this is not number 21."

"You stated that all scratch paper should be submitted with the solution. This is impossible since all preparatory work, other than mental gymnastics, was done with the aid of 12 checkers, 11 black and one red. These I cannot submit as scratch paper without incurring the wrath of my children."

"All my scratch paper has gone into the baler, as our janitor sells the scrap and would not let me send it to you."

"The scrap paper is attached. Perhaps it will not give much, but essentially the thought process consisted of a first attempt at the type of naive solution proposed. It might have been better not to have read the suggestion."

Readers of THE CONTROLLER are invited to express their reactions to articles appearing within our pages. Letters will be welcomed for inclusion on this page and must bear the writer's signature and address (which will be withheld if so requested). The Editors

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by Louis J. Smitten

★ DEVALUATION OF FOREIGN CURRENCIES
by John J. Miller

★ MANAGEMENT ADVISORY SERVICES IN THE FIELD OF ACCOUNTING
by Paul Grady

DOUBLE TAKE

Editors, THE CONTROLLER:

I have just finished reading the article entitled "Integration of Data-Processing Requirements and the Design of Electronic Equipment" in the March 1956 issue of THE CONTROLLER. The article was interesting on its own; however, it was doubly interesting because of the excellent talk given recently by Dr. Kircher before the Federal Government Accountants Association.

K. D. WILLOUGHBY
Comptroller
Office of the District Engineer
Corps of Engineers, U.S. Army
Los Angeles, Calif.

THE BEST THINGS IN LIFE ARE FREE . . .

Editors, THE CONTROLLER:

I would be very happy if you would send me some free information on accounting. Especially about the benefits of accounting such as pensions, vacations, etc. Thank you kindly.

DK

We suspect that the writer is a very young boy whose ultimate choice of profession will be based on the fringe benefits offered rather than on what he can offer to a profession.

—The Editors

ACCUMULATED EARNINGS

Editors, THE CONTROLLER:

I write to ask permission to use in a forthcoming book the substance of an article of mine, which appeared in THE CONTROLLER in September 1955, on "Reasons for Retention of Earnings." I desire to use it in my book, "The Accumulated Earnings Tax," which the Ronald Press Company, New York, will bring out in its fall booklist.

I would also like similar permission to use in this book my article on "Corporations Subjected to the Accumulated Earnings Tax," which appeared in the June 1956 issue of THE CONTROLLER.

ROBERT S. HOLZMAN, Ph.D.
Professor of Taxation
Graduate School of Business Administration
New York University
New York

DIRECT COSTING

Editors, THE CONTROLLER:

As a result of an article in the March 1956 issue of THE CONTROLLER, "Pricing with Direct Costs" by W. R. Wright, the subject of direct costing became a matter of discussion among some of my associates. I recall that THE CONTROLLER has run articles from time to time on direct costing, one of which I particularly remember as being published five or six years ago.

I wonder if you could help me out by giving me the reference.

SCOTT HARROD
Vice president-finance
Ditto, Incorporated
Chicago, Ill.

We are pleased to report that we have carried the following articles on this subject: "Better Management Controls Through Direct Costing" by W. R. Wright, August 1954; "Direct Costing: Advantages and Disadvantages" (review of an NACA study), June 1953, p. 280; and "Direct Costs as an Aid to Sales Management" by Jonathan N. Harris, October 1948.

"Controllership: Trends and Techniques," (Proceedings Booklet of 22nd Annual National Meeting, Boston, Mass., September 1953—now out of print but copy is available from our reference library) contained a paper "Direct Costing—Pros and Cons" by Herbert T. McAnly, p. 63. —The Editors

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Scanning the Scene

Misrepresented Earnings

Accounting practices which misrepresent corporate earnings were challenged in a recent address before the Chicago Control of Controllers Institute by Leonard Spacek, managing partner of Arthur Andersen & Co. Both the public accounting profession and the SEC were described as clinging to methods that are outdated.

Present accounting methods, according to Mr. Spacek, misrepresent the facts of financial life, first, by failing to use realistic depreciation provisions; second, by borrowing tax deductions from the future to reduce current tax payments under accelerated amortization plans; and, third, by failing to recognize the true significance of long-term leases of certain types of property which actually, if not technically, may be long-term debts.

Faulty depreciation charges result in the price-earnings ratios of stocks being overstated because the market price is influenced by a per share income figure that is distorted. Present financial reports depreciate plant properties on the basis of their original cost, Mr. Spacek pointed out, instead of current replacement cost. The same reports value the products of the plant at current sale prices and the result is that net income is overstated because depreciation charges against current income are figures in pre-inflation dollars.

Although the SEC was petitioned recently to require formally that financial statements filed for public record show the effect on income of depreciation charge adjustments related to price level changes, Mr. Spacek reported that the petition had been rejected "not on substantive grounds but on platitudinous conclusions unsupported by any evidence of record."

Today's Dollars Ensure Tomorrow's Health

One of the outstanding contributions of modern medicine has been its benefits to the American worker and to industry.

Millions of Americans walking the streets today owe the last 21 years of their lives to medical science. Fifty years ago, life expectancy at birth was 49 years. Today it is 70.

Industrial health programs have reduced on-the-job accidents and illness. They have reduced absenteeism and helped increase production. Compensation insurance premiums are down and worker morale is up.

Outside the plant, things are better, too. Public health has made tremendous strides. The worker today loses less time from work because of illness in the family.

Now along comes the National Fund for Medical Education—sponsored by past President Herbert Hoover and a distinguished group of leaders of American business—to point out a small cloud on the horizon. The nation's 82 medical schools—the foundation of our entire health and medical structure—are threatened with financial malnutrition. At the very time when they are faced with their sharpest demands—for more doctors, more research and more health services—the purchasing power of their endowment dollar is weakest.

If additional sources of income are not found, the Fund warns, the schools will have no choice but to turn to the Federal Government for subsidies.

To do the job assigned them, the schools need $10 million in additional annual income. The National Fund for Medical Education is appealing to industry and the medical profession for regular annual contributions.

Fortunately, a generous offer by the Ford Foundation has made it possible for corporations to provide a "bonus" with their gift. For every dollar of receipts this year up to last year's total, the Fund will receive from the Ford Foundation 70 cents additional. Everything over that amount will be matched dollar for dollar.

Seldom have corporations had an opportunity to provide such handsome largesse with their contributions. Gifts are already tax exempt. This fact, coupled with the matching provision, makes it possible to guarantee a gift to the schools many times greater than the cost to the companies.

Are Your Salesmen Overpaid?

Is your firm paying its salesmen too much or too little? Admittedly, the known difficulties of obtaining adequate information about the levels of salesmen's compensation are many. In a new booklet "Are Your Salesmen Overpaid?" Professor Kenneth R. Davis of the Amos Tuck School of Business Administration at Dartmouth College considers this neglected problem. His emphasis is not on *how* salesmen should be paid (straight salary or commission or combination) but upon *how much.*

Four reasons why salesmen may be overpaid, according to the author, are:

1. Both the productivity and the cost of a salesman are difficult to determine.
2. Management may be afraid of its salesmen.
3. Management may be apathetic about the impact of changes in business conditions and the marketing mix that require adjustments in compensation levels.
4. Sales managers may be biased in favor of higher earnings for the sales force.

The booklet, which is published by the Tuck School under a grant from the Alfred P. Sloan Foundation, and may be obtained free on request, concludes with a case study illustrating the four points outlined here. In these cost-conscious times, when the competition for the buyer's dollar is at its most intense, the booklet's content should appeal to corporate controllers and financial officers. —PAUL HAASE

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Long-Range Planning

Robert C. Tait

LONG-RANGE PLANNING for business is being talked and written about more in this country today than ever in history. Some types of business, such as the electric and communications utilities, have always had to do a great deal of long-range planning because they must foresee well in advance the extent of increased need for electric power or telephone service. It takes a long time to construct new facilities in the steel industry and many others, and, incidentally, the steel people have pretty consistently missed the mark on the underside with respect to the need for additional tonnage facilities. Of course, having a lot of excess steel capacity at present costs of construction would be a pretty intolerable load to carry, but on the other hand producing at capacity or in excess of capacity is also an expensive proposition.

It is only since the end of World War II that the ordinary manufacturing industry has really gotten very far with long-range planning, and one of the principal reasons for this, in my judgment, is the fact that any industrial planning must be developed against a background of a reasonably sound projection of the entire economy. And it has really been only recently that we have developed sufficient indices and statistical data on various phases of our economy to make such reasonably sound projections. There are still a lot of gaps and inadequacies in the data available, and especially there is far too long a time-lag in getting these data; but still we have made a lot of progress in the right direction since World War II.

ANNUAL RATE OF SAVINGS

One of the most important areas in our national statistics that has been quite inadequate is data on the savings of our people. The national dollar figure on savings and the percentage it bears to personal disposable income are most important figures. What we have had until most recently is wholly inadequate and inaccurate, and even if the figures were accurate they have not been available soon enough. Sometimes almost unaccountable changes in the savings habits take place quickly with changes in the general confidence with which our people face the future.

Back in the spring of 1951, for instance, the annual rate of savings, as then quite erroneously calculated, practically doubled in a few weeks, and nobody really expected this or knew why it took place—but it had a terrific effect on our economy. A lot of good reasons were apparent a considerable time after the fact, but they were not apparent soon enough to be of any value in taking protective measures to cushion the impact. One of the reasons for this sudden change was undoubtedly the fact that the Korean War had induced all kinds of purchases of semidurable goods in the fear that they would not be available later on, and these were bought for cash, out of savings or on installment purchases.

By the late spring of '51 the average maturity of much of this installment paper was behind us, and more importantly, the public suddenly began to realize that we were going to be able to produce both guns and butter. All ordinary consumer goods were still available and apparently likely to continue to be—so quite without warnings or predictions a significant change in savings habits took place, and the rate of savings as then measured practically doubled overnight.

One of the great weaknesses in the whole savings figure was that the statistics for personal savings had traditionally been derived by deducting personal taxes and personal consumption expenditures from total personal income. The resultant figure, however, in no way represented unspent cash income since it included such durable or semidurable goods as houses and even automobiles, as well as payments of insurance premiums. And while it is intriguing to think one could save $7,500 by buying an Eldorado convertible, that amount of money once spent was certainly no longer available for other purchases.

"FLOW-OF-FUNDS" FIGURES

A couple of months ago the Federal Reserve Board brought out a new series of figures with most interesting potentialities. For want of a better term this is referred to as a "Flow-of-Funds" system of national accounts. The structure of the Flow-of-Funds accounts is intended to reflect the functional and institutional features of importance in analyzing the role of financial factors in economic fluctuation and growth. Back in my days in the banking business we used to construct what we

ROBERT C. TAIT is president of Stromberg-Carlson Company, Rochester, N. Y., a division of General Dynamics Corporation. He is also a senior vice president and a member of the board of directors of General Dynamics Corporation. Following his graduation from Princeton University with a Bachelor of Arts degree in 1922, Mr. Tait had broad experience in sales, sales management, advertising, and manufacturing (1922-1934) before entering the financial field in which he held three bank vice presidencies until he joined his present affiliation in 1949.

called a "Where Got—Where Gone" statement in analyzing certain companies. Your conventional balance sheet and income statements do not give the whole story that a Source and Application of Funds report over a period of time reveals, this being merely a fancier term for what we called the Where Got—Where Gone statement.

The new Federal Reserve Flow-of-Funds figures are more like this type of Where Got—Where Gone statement for our entire economy. For example, in 1953 consumers purchased goods and services in the amount of $237 billion, paid $23 billion for insurance, retirement benefits and gifts, $41 billion in taxes, and added $13 billion to their cash and other financial assets—all of which adds up to $314 billion. Approximately 60% of this sum came from wages and salaries, another 20% from investment income of one kind or another, but the remaining 20%, or around $60 billion, could not be accurately accounted for. The Flow-of-Funds accounts reveal that approximately $20 billion of this was covered by receipts from the sale of tangible assets, such as real estate, automobiles, etc.; that somewhat more than this came from insurance benefits, pension receipts, gifts, and public and private aid. Tax refunds accounted for $3 billion, and the remaining $11 billion came from borrowings, the mortgage debt rising by $6 billion and other consumer indebtedness by about $5 billion. Thus there is a full accounting of consumer receipts, expenditures and finances in a single statement.

This system not only provides some missing links, but also develops far more accurate figures in respect to the elusive savings that I have been talking about. The old Department of Commerce figures on personal savings showed them as 7.2% of disposable income in 1954, while net liquid savings according to the Flow-of-Funds system, that is the amount that could have been spent additionally without any further borrowing, were only $3 billion, or 1.2% of disposable income.

USE OF STATISTICS

I seem to have gotten off the track here a bit on this subject, but I feel that the introduction of the Federal Reserve's Flow-of-Funds figures will do much to increase our knowledge of what is happening in our economy, and if we can step up the speed with which this information is made available, we can perhaps more nearly approach the point where corrective measures can be taken early enough to be increasingly effective. So, despite the fact that we need more and better statistics more rapidly and more accurately, we still have by far the best statistics available with respect to our amazingly complex economy of any country in the world. Furthermore, we are making better use of them since World War II. We have the President's Council of Economic Advisors, the greatly improved statistics of our powerful Federal Reserve Board that I have already mentioned, the CED, the National Planning Association, the U. S. Chamber of Commerce, Brookings Institution, the so-called "Paley Commission," officially known as the President's Materials Policy Commission, which reported to the President in June 1952 with five volumes of data projecting our economy into 1975, the Twentieth Century Fund, which has turned out such monumental works as "America's Needs and Resources" and has just brought out a new revision of this study entitled "America's Needs and Resources: A New Survey," and so on and so on.

BASIS FOR ECONOMIC PROJECTIONS

When you add to such organizations the consensus of opinion of our many able public and private economists, we are really approaching a basis for sound economic projections which take into account all the major factors affecting our economy. Take just one example of an important factor—the tremendous impact of the rapid increase in our population that is on its way. Population growth estimates in the past have generally been quite a bit on the low side. If the present projections still prove to be on the low side we are really going to have an onrushing increase in our population that will affect every phase of our lives. So I repeat, any long-range planning for industry must be conceived against a background of the general economy, and we are now in better position than ever to evaluate the probable course of the general economy.

Now, in the average industry, how far should long-range planning attempt to reach? In an industry such as ours, which deals in communications and the rapidly developing field of electronics, anything less than five years seems too short a time. Five years is an awfully short time these days—or maybe it's my age. Actually it frequently takes longer than that to dream up a new product, perhaps uncovered in our Research Department, and then refine it for commercial application, redesign it for production, subject it to field and market tests, eliminate the bugs and get it into quantity production, and then successfully gain public or commercial acceptance for volume sales. This cycle, I think, runs longer than most people, even businessmen, realize. In addition to this, it takes time to plan and build the new facilities that may be required, to plan the type and timing of new financing that may be needed, to train the required supervisory personnel, etc.

Five years, therefore, appears to be the minimum round number of years for which we should attempt to plan ahead. To reach out to ten, on the other hand, in most businesses would appear to me to involve too much crystal-balling, again excepting the utilities, transportation and other segments of our economy that depend largely upon the general population trend and growth of the economy as a whole. The aircraft industry, with which we are now affiliated in General Dynamics Corporation, is another longer-range industry. It takes between five and ten years from the drawing-board stage of a new airplane to quantity production of the finished product. As you know, there are about $1/2 billion worth of commercial jet aircraft now on order for delivery some

"We'll invite mother. This will be her room"

years hence. This is good, but in passing, I might add that if we had them now our airport, communications, and navigational facilities would be completely inadequate to handle them.

LONG-RANGE PLANNING TECHNIQUES

Let's assume, therefore, that for our purposes we want to develop long-range planning techniques for at least a five-year period, in order to obtain the most efficient and profitable use of our facilities, funds and manpower during the next few years. If intelligently and honestly conceived, such plans should assist top management in making decisions with respect to:

1. Stabilizing profits and improving return on investment.
2. A long-range capital program.
3. Development and training of supervisory and management personnel.
4. A more effective long-range *sales* program.
5. Improvement in the procurement of purchased parts and materials.
6. A more effective means of smoothing out the production peaks and valleys, which should also lead to
7. Improved labor relations.
8. A sounder basis for divisional and departmental budgeting.

The scope of such planning should cover all major phases of the business: types and quantities of products, methods of distribution, use of productive facilities, financial requirements, personnel requirements, procurement schedules, the timing and effect of automation and where it can best be applied, the extent and direction of research and development, profit margins and return on investment by product and division, etc.—all, of course, weighed against that backdrop of the general economy which we have been talking about.

It seems to me there are two general approaches to this type of long-range planning: one is to set up desirable goals by products, departments and divisions, and then try to figure out how to reach these goals; and the other is to have each department and division of your company calculate its own future growth as accurately as it can without regard to other segments of the business or any particular emphasis on the most desirable goals.

Neither of these is right in and of itself, in my judgment, but rather the more nearly correct answer is likely to come from a combination of both; that is, you try to calculate the future growth pattern of a given product or series of products in a division of your company, then weigh that against what would appear to be the most desirable growth pattern, and then see how closely you can reconcile the two within the realm of practical limitations and fit them into an over-all pattern for your company.

A JOB FOR ONE MAN

It takes about $12,000 of capital, on the average, to create a job for one man. In 1954 American industry poured about $28 billion into new plants and facilities . . . it maintained and provided employment for some 2.3 million people (but) suppose the Government had to provide all these jobs through a public works program? Where would it get the $28 billion?

There is a belief . . . this could be done simply by merely soaking the rich some more. The answer, utterly incredible as it may seem, is: that if the Federal Government were to take from every taxpayer in this country every penny of his taxable income above $2,000 a year, it still wouldn't get the $28 billion!—BENJAMIN F. FAIRLESS

Bottom-Up Planning

Thus the roots of our long-range planning are decentralized to the individual departments and divisions of the business on what might be called a philosophy of "bottom-up planning." In passing, I might add that I think it is a sound tenet of good management that decisions should be made at the lowest practicable level. We could spend considerable time on this one point but I don't think it is particularly relevant here. By giving the departments and the divisions the opportunity to submit their plans we are fairly well assured that no aspect of the business will be overlooked, and we also get much of the important work done at the level where the greatest degree of specific knowledge exists. From there on it becomes a matter of relative evaluation.

We decided to place the over-all responsibility for our long-range planning with our corporate treasurer, if for no other reason than the fact that this man had already done a great deal of effective work along these lines. He is a student and analyst by nature. But also this is a staff department with no axe to grind, and it is in an ideal position to weigh, analyze and evaluate equitably the growth patterns set up by each department and division, which, as I have said, are set up without any particular respect to other divisions or the over-all welfare of the company.

The central planning department is responsible for:

1. Study of business conditions and forecasting with respect to the general economy.
2. Market analysis and research, performing services available to all divisions.
3. Determination of capital budgets and long-range appropriations on the basis of return on gross investment.
4. Redetermination of product line goals that will fit into the over-all company pattern of availability of capital facilities, engineering, and technical manpower.

Criteria

Certain criteria are needed to measure or evaluate long-range plans, especially when it comes to establishing a priority of one specific plan over another, or approving or disapproving a plan. Such criteria vary with the nature of each particular project. From the over-all standpoint, one of the most important yardsticks is return on gross assets employed. For us this is the real acid test. It is not always easy to apply this measurement to an individual project under consideration, but it is possible to apply the test to a divisional forecast once that particular project, along with others, has been incorporated into a division's long-range program.

Another criterion which is of importance to us in passing general judgment is the relative stability of the project in question. For example, projects within our telephone equipment division are generally predicated on long-range requirements within the telephone utilities market. Hence they carry considerable weight in our thinking as compared with a project that would be in for a short period only, and then out again.

Another criterion which is important to us is the extent to which a given project supplements our present product or mar-

(Continued on page 336)

The Operating Budget

John M. Thompson

TODAY, we hear a great deal about the operating budget and its use as a tool of management. Very real progress is being made in recognizing the extent to which budgeting can be applied in business management, and the contribution which it can make towards effective and efficient administration and planning. When budgets were first introduced, they had a very restricted application that usually implied a form of financial control over expenditures and were most commonly used by governments in the allocation of funds to various ministries to meet their financial requirements. Our modern concept is that the budget is synonymous with planning and, in effect, represents a program for future action. Concurrent with its planning function, the budget is also being developed into a stronger and more forceful device for establishing sound financial control over all phases of business activity.

There are certain basic conditions which must be present if a budget is to be operated successfully and be made to contribute most effectively to management.

A SOUND ORGANIZATIONAL STRUCTURE

There must be a sound organizational structure which logically and clearly designates lines of authority and responsibility throughout the organization. Good organization has three aspects:

First, it is a grouping of total responsibilities in definite areas corresponding to fields of performance;

Second, it is the assignment of individuals to these fields of performance who are entrusted with the requisite authority and are made accountable for discharging these responsibilities; and

Third, it is the adoption of proper measures and policies to ensure the effective functioning of these individuals in their respective posts.

In practice, it is usual to find that when budgets are first introduced, important changes in a company's organization are necessary to give effect to these organization principles. Responsibility for many functions has not been definitely assigned and too often it is not possible to place direct responsibility for operating results and expenditures on specific individuals. Under such conditions, "buck-passing" is always prevalent and becomes clearly evident as soon as proper budgeting procedures are initiated.

DESIGNATED RESPONSIBILITY

Traditionally, it has been accepted that it is the responsibility of the financial officer to initiate and prepare the budget and, as a consequence, the budget has come to be accepted as an accounting mechanism or device by the operating staffs of many organizations. Since it is identified as an accounting mechanism, they do not feel the same sense of responsibility for achieving the results set out in the budget that they would if they had submitted the budget information to management as a program of their own activities for which they would be held accountable.

Successful budget administration is dependent upon a proper understanding between the financial officer and the operating staffs as to their responsibilities for the preparation of the budget and the role which the financial officer plays in its preparation. The financial officer co-ordinates all the myriad steps required for the preparation and presentation to management of the budget. However, he does not influence or direct the budget results. He assists the operating staff by his counsel and advice and, through his department, supplies details of accounts, trends, ratios and other statistical data and institutes procedures to simplify the work of preparation as much as possible. However, the operating staffs are completely responsible for the budgeted results and must understand, when submitting them, that they represent a planned program of their activities for the budget period.

The total of the budgets of the operating staffs, when summarized and presented to management by the financial officer, represents the company's operating program for the budget period. At this point, the financial officer, in his capacity as staff advisor to the management of the company, is free to submit his criticisms or comments on these budgets to the management. However, it is management's responsibility to make the decision whether or not the budgets will be accepted and, if not, what modifications must be made to them before approval can be given. The approval of the budgets in final form by management constitutes authority to the organization to proceed to put into effect the plans provided for in the budget. Performance by individual managers and department heads should then be judged on the basis of their ability to perform according to these plans.

It is the duty of the financial officer to make periodic reports to management on

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variations which will arise between budgeted and actual results. He should not, and should not be required to, take disciplinary action within the organization in connection with these discrepancies and must not give any inference that he is assuming the role of management when seeking explanations and information for the purpose of submitting his report. All managers, department heads and others submitting budgets must understand that they are completely and solely responsible for their own budgets and, once they have been approved, they must accept responsibility for achieving forecasted results.

ROLE OF THE FINANCIAL OFFICER

It is essential for the management of any organization to know the relationship which should exist in budget administration between the financial officer and the operating staff. In all too many instances, management does not recognize this basic relationship and expects the financial officer to administer the budget program and be responsible for its success. A budget program cannot be successful under such conditions and can only be effective if management gives it its full support and the organization is fully aware of this.

The acceptance by the financial officer of his proper role in budget administration does not in any way weaken or detract from his contribution to his company. Instead, his contribution to management will be infinitely greater when he acts in his proper role as an advisor to management and to the operating staff in the preparation and approval of the budget, without in any way assuming line responsibility. If he assumed line responsibility, he would cease to perform the duties of his office and would create confusion and destroy morale. This would seriously hinder the development and success of the organization.

MANAGEMENT'S OBJECTIVES

The operating budget is often referred to as a blueprint of a company's plans for its future course of action, both on a short- and a long-term basis. If this is so, then it is necessary for management to know its objective so that it can give intelligent direction to those who prepare the budgets. It may wish to be leader of its field and monopolize the major part of its market; it may wish to excel in performance by producing a higher quality product than that of its competitors; it may concentrate on making maximum profits, even to the extent of disregarding the long-term interest of the company. Whatever its objectives are, however, they should be known and recognized, and plans for achieving them should be reflected in the budget.

While a company can have many different kinds of objectives, good business management recognizes that the primary objective of any commercial enterprise is the earning of a profit which will yield an adequate return on the invested capital. Until quite recently, it was customary for management to speak of profits as a percentage of the sales dollar, but the present trend is to stress the necessity of earnings being related to invested capital—the only basic yardstick for gauging satisfactory performance. Internally, it is customary for management to set as its objective a return on assets and not on the net worth of the company. Investors look for a return upon the net equity investment of the company, but for operating purposes management must be concerned with the effective use which is made of the capital under its direction. The source of the capital has no significance in evaluating the effective use made of it in the company's operation.

If the company produces more than one product, the asset values should be distributed to each of them and the managers of each of these product lines advised of the gross investment for which he is held accountable. The assets which are included in this distribution are cash, accounts receivable, inventories, fixed assets at original values, and other miscellaneous items. The original value of fixed assets is used as a means of injecting a rough adjustment factor to provide some equalization of facility values between divisions using old plants built at relatively low cost and those operating in new plants built at high cost. This is based on the rough assumption that the relative inefficiency of the older plant is compensated adequately by its relatively lower gross value, without deduction of accrued depreciation.

"If I save up 320 coffee breaks,
could I take a two-week vacation instead?"

RATE OF PROFIT

It is usual to set a percentage return on assets of from 20% to 30% before taxation. This rate of profit might seem too high for attainment in many lines of business. Nevertheless, any rate less than 20% cannot be regarded as satisfactory insofar as the financial management of the company is concerned. It is of the utmost importance to examine closely those products which fail to yield this return-on-assets percentage, since they hinder the achievement by the company of its over-all goal.

Achievement of the best return-on-asset performance requires the maximum utilization of assets to obtain the greatest volume of sales at the highest possible profit margins. By the introduction of the asset turnover factor to the usual profit margin ratio, the attention of management is focused on the necessity of capital conservation and utilization. It is extremely important that this simple relationship be made abundantly clear to all operating management.

A simple illustration of this relationship is that a 5% profit margin would yield a 20% return on assets if the sales volume is four times that of the asset value, whereas a 20% profit margin will only yield a 5% return on assets if the sales volume is one-quarter of the asset value.

The analysis of profit performance against this standard relationship between profit margin and asset turnover does not provide a guide as to the turnover of fixed and current investment separately or for individual asset accounts such as receiva-

bles and inventories. The problem of low asset turnover must be solved by reference to each of these types of assets to assure that they are turned at a maximum practical rate, although no general standards can be established for application to all products manufactured by a company. Low inventory turnover is often the reason for an unsatisfactory return-on-assets ratio.

SUCCESSFUL BUDGET ADMINISTRATION

Successful budget administration is therefore dependent upon good basic organization, a proper understanding by all management levels of the contribution which the financial officer makes in the compilation of the budget and their own responsibility for it, and the setting of objectives which are realistic and which embody the decision of management for the future course of the company's activities.

If the exact volume of business that a company would receive in a given period could be predicted, it would be possible to plan its production and schedule its distribution so that costs would be kept at a minimum and profits at a maximum. Expenses, costs and profits would be controlled, avoidable risks which are inherent with the operation of any business would be eliminated, production and employment would be stabilized and satisfactory control of inventories established. Unfortunately, such knowledge of our future business is never available and it is therefore necessary to find a substitute. It is very evident that the success of the budget will be dependent upon the degree of accuracy which is achieved by this substitute.

FORECASTING

The substitute is forecasting, which can be based upon anything from the intuitive or subconscious foresight of an exceptional manager to the conscientiously planned results of organization and business research. As a rule, organized forecasting is not needed for many smaller business enterprises, but as a company grows and increases in its variety of products, number of marketing channels or degree of decentralization, it becomes increasingly important for management to recognize the need for a separately organized staff which will perform this function. Forecasting is usually dependent upon an estimate of general business conditions—particularly those conditions affecting the specific industry involved—and the interpretation by the company of the participation in its own particular market which it is likely to enjoy.

The degree of accuracy which can be achieved in forecasts varies greatly from industry to industry and is dependent upon specific conditions. While it is relatively easy to forecast in one situation, it is very difficult or next to impossible in another. Processors of stable products such as foods have markets which are affected only to a minor extent by general business conditions and their growth depends primarily on the skill and aggressiveness of their management. These firms have the least difficulty in making reasonably accurate forecasts of their business volume. In the case of producers of capital equipment, where a large proportion of their sales volume is often dependent upon obtaining one or two large contracts, it is next to impossible to provide accurate forecasts except in the broadest general terms over a fairly extended period.

The art or science of forecasting* is receiving increasing attention from all business management today and we find market research departments with trained personnel attached to practically all companies of any size. These market research staffs attempt to make projections of the level of general business activity and the demand for the various products of their particular industry. They should know what the market is for their company's products and where it is, and should assist sales managers in setting their sales objectives. The extent to which a company can participate in a specific market is dependent upon the acceptability of its products to its customers and the methods of distribution which are used in covering the market. The market research staff is not responsible for either of these two factors, but, from its knowledge of markets, it should be able to advise management of weaknesses or deficiences in their marketing methods and to suggest ways and means by which these can be improved.

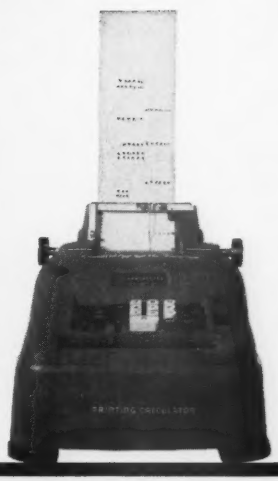
Forecasts should be made on both a short- and long-term basis. A short-term forecast usually refers to an immediate budget period which will generally coincide with the company's fiscal year. Long-term projections are used for estimates of the growth of a business anywhere from five to ten to twenty years ahead, depending upon the nature of the business. Decisions regarding short-term operations cannot properly be made unless the management of the company has made long-term plans for the future growth and development of the company. There are altogether too many instances where current operations are being seriously affected because no one gave thought to the future of the company, and decisions were made on a short-term day-to-day exigency basis.

Once the specific sales forecast has been agreed upon, it is possible to determine whether or not a profit which will be satisfactory to the company can be obtained from this sales volume. This involves the detailed preparation of production schedules, cost estimates and expense allowances of all kinds necessary for the company's operations. One of the greatest weaknesses of the budgeting procedure occurs at this stage. Too often it is assumed that the various actions required to give effect to the budgeted program will take place once it is approved. Unfortunately, in all too many instances, these actions remain only as good intentions and are never put into effect.

(Continued on page 340)

* See *Business Forecasting* (New York, Controllership Foundation, Inc., 1950). $5.00 ($2.00 to members of Controllers Institute).

it takes two to tango



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Verification of Charges for Electric Services

Fred A. Wahlers

ANNUAL STATEMENTS of public utility companies show tremendous growth in sales of electrical energy to industrial and commercial customers since the end of World War II. In 1946, these sales were approximately 132 billion kilowatt hours while in 1955 they totaled 328 billion kilowatt hours—an increase of 149 per cent! This growth reflects not only the general expansion of the economy but also the trend toward higher lighting intensities in factory, store and office and increasing use of electrically operated automatic machines in factories and offices. Economists and technologists agree that this trend represents the beginning of the age of electricity, an era in which electrical power consumption will quadruple itself within the next 15 to 20 years.

CONTROL OF POWER PURCHASING

In view of this condition, it becomes essential that fiscal management exercise the same rigid control over the purchase and use of power that is applied to the purchase of equipment and materials. Until recently, only a few companies were aware of the real value of this control; today, however, businessmen are discovering that it can mean substantial reductions in production costs and overhead.

In many respects, the purchase of electric power is similar to any other transaction and requires regulation measures that are standard to good auditing practice. These include verification of invoices for correctness of quantities; extensions and total amount; and a thorough check of the propriety of the charges.

As the controller, in addition to his auditing function, has the added responsibility of pointing out to the proper executive any operating inefficiencies brought to light by analysis of operating expenditures, he will be directly concerned with the purchase of electric power and at the most favorable rate. In practical terms, the invoice should be audited by a person with a basic understanding of the terms used—kilowatt hours, demand, power factor, etc.—plus a detailed knowledge of the rate itself. This simple measure will afford protection against many ordinary human and mechanical errors which the utility's billing operation is subject to. Some of these are:

1. Arithmetical errors in extensions;
2. Misapplication of the various demand and energy steps in the rate;
3. Incorrect prorating of the demand and energy steps for invoices covering an abnormal billing period;
4. Mistakes in application of taxes; and
5. Improper application of fuel charges.

ERRORS IN INVOICES

Important as the meticulous staff audit may be, it does not provide complete assurance against errors in utility invoices, nor does it indicate if power is being obtained at the most favorable rate available to the purchaser.

In buying electrical energy one is, in effect, doing business with a highly technical and complex system of equipment, meters and technicians. Within this system of production, distribution, evaluation and billing (particularly the latter two areas of operation) there are innumerable potential sources of discrepancy which may be detected only by a thoroughly competent electrical engineer with an intimate knowledge of utility operations. How could the best auditor discover the following errors from the simple data on a power company's invoice?

1. Meter indications incorrectly recorded in meter reader's book;
2. Mistakes in transcribing entries from meter reader's book to the customer's ledger;
3. Failure of the meter reader to reset the demand indicator on the meter;
4. Application of the wrong constant to the meter readings; and finally,
5. Inaccurate meters.

On the face of it, it might seem that a change in the amount of the invoice from its precedent would show up such a mistake. But study will show that charges for electric service vary tremendously from month to month and, to the layman, without significant pattern; moreover, in obtaining a rebate, it is largely the customer's burden to show how the error occurred.

FAVORABLE RATES

The federal and state public service commissions which regulate utility company operations make every effort to see that all power users are provided with electrical service at equitable rates based on the consumer's energy consumption pattern and the utility's capital investment.

FRED A. WAHLERS, E.E., P.E., graduated from Polytechnic Institute of Brooklyn, N. Y. and received his professional Engineer's license (N. Y. State) in 1935. From 1927-1943 he did rate, evaluation and appraisal work with Consolidated Edison Company of New York, Inc.; from 1943-1945 he was electrical superintendent, Manhattan Project at Oak Ridge, Tenn. From 1946 to date, he has been associate professor, Electrical Engineering, Polytechnic Institute of Brooklyn, teaching courses related to power aspects of the profession. He is a consultant on electrical reports.

This has necessitated a highly involved assembly of regulations and rate schedules that usually vary from one community to another. Perhaps the only provision that is common to all regulations is that the *purchaser,* not the utility, must be responsible for selecting the contract basis that enables him to buy electrical energy on the most favorable terms.

Such favorable terms probably were obtained when the plant was constructed and the design of the plant's electrical system was very carefully studied for a minimum investment and operating cost consistent with safety, reliability and provision for expansion. However, the electrical requirements of most successful companies increase rapidly as time goes on, due to increase of business volume as well as changes in production techniques requiring greater use of electrical energy. The corresponding increase in the invoices for electric service usually is accepted as normal; no thought being given to the possibility that now another rate is applicable and that this other rate may result in very substantial savings. Many utility representatives make an effort to analyze the customer's requirements in this respect; but their time and resources for such evaluations are limited by their own work loads.

The answer to these two "control" problems of technical audit and rate selection lies in the availability of several highly competent, licensed professional engineers who specialize in this field of practice. Sometimes it is possible to locate such a qualified person within your own organization, but, generally, the value of this man's time to your firm will exceed the charges of the outside utility rate specialist. In retaining such a specialist it is advisable to follow normal purchasing procedures; see two or three of them and check references carefully.

The preceding items have dealt largely with the auditing function of the controller. As a principal executive of his firm, the controller has the added responsibility of bringing to light any operating inefficiencies that may exist. Two frequently discovered operating inefficiencies in the plant's electrical system are high-peak demand and low-power factor.

DEMAND CHARGE

One of the elements of a bill for electrical service which is not well understood by the average business executive is the demand charge. The basic necessity for such a charge stems from the inability to store electrical energy in any commercial quantities. This means that the utility must generate electrical energy at the exact same time rate as used or "demanded" by the customer.

The magnitude of the customer's demand on the utility system is measured by a demand meter. The usual unit of measurement is the *kilowatt* (kw), although sometimes it may be the *kilovoltampere* (kva). However, as all electrical equipment has some overload capacity due to its heat inertia, the demand meter does not indicate the maximum instantaneous demand but, rather, averages the demand over a definite time interval such as 15 minutes or 30 minutes. This averaging over a time interval reduces the demand charge which otherwise would result from a high instantaneous demand of very short duration. The highest 15-minute or 30-minute demand which has occurred during the billing period is then the maximum demand in kw or kva and is the basis of the demand charge for that period.

An engineering study in cooperation with operating or production managers may indicate ways of reducing the maximum demand by a rescheduling of plant operations so as to increase the diversity of power peaks between the various component operations of the production process. Another simple method is to schedule certain nonproductive operations, e.g., charging of batteries in fork lift trucks, to off-peak hours.

POWER FACTOR

Many industrial power rates contain another provision: a power-factor clause. This states that the consumer will be penalized for every point that his electrical system's power factor passes below a certain base point. This charge is, of course, over and above the regular demand and energy charges.

To explain power factor incompletely, but sufficient to the purposes of this discussion, it is necessary to point out that certain kinds of electrical equipment, such as transformers, motors, fluorescent lamp ballasts, and several others, have low-power factor, require a disproportionately large current (amperes) and, therefore, require larger and more costly electrical equipment to supply them with *useful* power.

Low-power factor limits the full-power capability of the utility's investment in plant equipment by restricting the real useful power that the equipment can deliver to the customer. The utility must employ larger, more costly equipment to deliver the same *useful* power that could otherwise be delivered from smaller equipment *operating at unity-power factor.* The added cost of the larger utility equipment is reflected in the rate schedule by the power-factor clause.

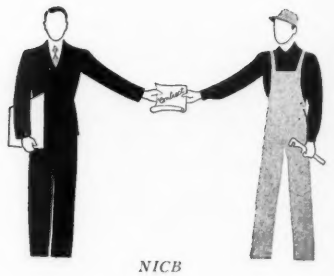
Reduction of the charge for low-power factor requires a detailed knowledge of the operating characteristics of the electrical equipment in the customer's plant. With this data, the electrical engineer can determine the proper corrective action that is needed to raise the power factor. Usually this involves installation of capacitors, or synchronous motors at critical points in the plant's electrical system. Obviously, this investment in new equipment must be written off by the savings obtained through elimination of the power factor penalty charges.

The subjects discussed here cover but a few of the areas in which electrical consumption and electrical equipment fall within the responsibility of fiscal management executives. New developments that will cut costs and improve operating efficiency are being produced in increasing numbers by the electrical industry. As electricity attains continuously greater importance in all business operations, top management must maintain a close relationship with qualified electrical men and an awareness of the opportunities for substantial cost reductions in the purchase and use of electric power.

"Considering all the money you've spent on my education, dad, doesn't it make sense that the more salary you pay me the greater will be the return on your investment?"

The Controller's Role in Collective Bargaining

Maynard F. Carter



NICB

EVERY PROVISION of every labor contract negotiated today has some direct or indirect effect on the financial position of the company with whom it is made. The controller, as the chief financial officer of the company, is therefore vitally concerned with the progress and outcome of collective bargaining. More important, his responsibilities make him a key figure in the negotiations.

Few corporate activities require such accurate assessment of their impact on a company's financial future and operating position. And the controller is singularly well equipped to make such an appraisal. His over-all knowledge of the company's affairs, his position as a policy maker, his training as an analyst fit him especially well to participate in collective bargaining, either as a member of the negotiating team or as one of its principal advisers.

A survey by the N. Y. State School of Industrial and Labor Relations under a grant from Controllership Foundation, Inc.,[1] indicates that the controller does participate in the great majority of labor negotiations today. The degree to which he does so ranges from the minor function of supplying requested data to that of company spokesman.

These extremes, according to this survey, are unusual; generally, the controller's role is at some intermediate level where he is a member of, or maintains close relations with, the bargaining team. In such a role he anticipates the kind of material needed to support the company's position, gathers, classifies and interprets such material, and then sits as a member of the policy-making or negotiating group.

The laws and administrative rulings under which contract negotiations are conducted and the arbitration procedures that ensue when they break down are formidably complex. The controller cannot easily become familiar with more than the "basics" of labor legislation.

However, he can maintain close year-round liaison with the company's labor relations director with a view toward exchanging pertinent information on issues that may arise. By thus applying specialized knowledge to the problem, he can help the negotiator meet each situation at the bargaining table with a more informed perspective and a surer grasp of its implications.

It is also highly worth while for him to keep in touch with officials of other companies in his industry or geographical area to better gauge the trend of labor demands.

ECONOMIC KNOWLEDGE

It follows, too, that the controller should be familiar not only with general economic trends but also with the changing patterns within his industry and in his local area. The more complete and authoritative his information, the better will he be able to meet the arguments advanced by the union economist.

From such contacts he will be in a position to make more intelligent forecasts of demands that may be made upon his own company and to make advance preparation of data that permit their evaluation. As a member of top management he can frequently get valid opinions on how particular clauses have worked for other companies.

In any event, he should establish communications channels that will keep him thoroughly informed on issues that may arise. Then, as the financial and statistical expert of the management team, he should set about gathering from payroll and personnel records the data that will be needed to refute unreasonable demands and to assess properly the cost of such proposals as the company may be inclined to accept.

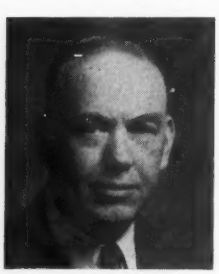
UNION ISSUES

The issues presented in collective bargaining become more complex every year. Once confined to simple demands for higher pay, they involve today many facets of the worker's economic and social life. Not infrequently, basic wage rates do not come up at all in the contract discussions.

Nowadays, as often as not, fringe benefits take the spotlight from the simpler issue of higher wages. Pensions, hospitalization and group insurance, interim performance differentials, deductions for the Community Fund, vacations, allowances for travel time—these and a host of other diverse questions figure prominently in many a negotiation. Every one of them has some direct or indirect effect on costs.

Where pension plans are the issue, it is the controller who works with outside consultants and actuaries to determine their ultimate cost; he analyzes the invest-

[1] *Providing Facts and Figures for Collective Bargaining: The Controller's Role in Labor Negotiations* (New York, Controllership Foundation, Inc., 1950). $5.00 ($3.50 to members of Controllers Institute).



MAYNARD F. CARTER is comptroller, secretary and a director of Worcester Pressed Steel Company, Worcester, Massachusetts. His former affiliations include public accounting; Rustless Iron & Steel Company, Baltimore, Md.; bank examiner, State of Vermont; factory manager, Howe Scale Company; Westinghouse Electric & Mfg. Co.; and Standard Oil of N. J. affiliated companies. He is also a director of Federal Mutual Insurance Company and a member of Controllers Institute, National Association of Cost Accountants, American Ordnance Association and National Metal Trades.

ment problems involved, and puts a price tag on the administrative expenses and tax liabilities. To reach an intelligent decision on pensions, insurance, and a variety of other fringe demands, the negotiator must lean heavily on such analysis and judgment.

The controller is generally the official best equipped to assemble and evaluate the financial significance to the company of data bearing on these questions. Even where the figures are gathered by the personnel or industrial relations departments, the controller is by training and the nature of his responsibility the logical individual to appraise them in terms of costs; in short, he is the official best able to predict the one thing management wants to know about them: their effect on the company's future.

MANAGEMENT'S SPOKESMAN

It has already been noted that the role in labor contract negotiations may range from merely supplying information requested by the negotiator to actual leadership of the management side. The extent to which participation is necessary depends on many factors—not the least of which is the initiative he shows in discharging his management responsibilities. In many cases a strong controller can protect the chief executive of the company from having to take a hand in the negotiations at all. The size and type of the company and his length of experience in its area of business are some other considerations.

It also follows that he should translate the cost of union demands into their effect on sales or on the company's position vis-a-vis competitors in distant areas. Sometimes it is possible to indicate to the union that certain demands may be excessive. The controller may develop data that permit the company to make its own reasonable demands of the union. Of course, this may be essential when the company is in an unfavorable earnings or sales position, although management, of course, must first weigh the advisability of revealing such information to support counter-demands.

Regardless of who makes the company's presentation at the bargaining session, the controller should marshal his facts, analyses and recommendations in readily usable form—all tables, charts, analyses, summaries, opinions, and proposals can be indexed as a "fact book" to which the spokesman can turn for a continuing supply of reliable information. Thus, if the negotiator has to know the number of hours worked each month, the average wage to compute for a holiday, the cost of vacations, and so on, answers are available. The last hour of negotiation is frequently very fast moving and good basic "visual aids" are vital.

The cost of actual and probable union demands should be broken down into

(Continued on page 336)

25TH ANNUAL NATIONAL CONFERENCE CONTROLLERS INSTITUTE

September 30-October 3

25th ANNIVERSARY

PROGRAM

Sunday p.m.	Reception for members
Monday a.m.	Members' Business Meeting
	General Session
noon	Luncheon Session
p.m.	Industry Conferences
eve.	Open
Tuesday a.m.	General Session
noon	Luncheon Session
p.m.	Topical Conferences *(A new feature)*
eve.	Banquet/dance *(Another new feature)*
Wednesday a.m.	General Session
noon	Luncheon Session

Ladies Events will include a special luncheon, fashion show and tea sponsored by the New York City Control at the Waldorf-Astoria Hotel

Waldorf Astoria
NEW YORK

Retirement Plans

A qualified employes retirement plan will not be adversely affected by the reinstatement of former participants, provided the benefits to be paid on account of services rendered after reinstatement are adjusted to reflect prior benefits.

Personal Income in 1955

The average, or median, income of men reached a new high of $3,400 last year—up about $150 over 1954, according to the Census Bureau. The average of women last year was $1,100, about the same as it had been in the previous three years.

Supreme Court Ruling

The Supreme Court has ruled that state "right to work" laws can not ban the union shop in the railroad industry. The high court did not, however, disturb state laws as they apply to other industries.

Another recent action of the Court was a decision to refuse to review a lower court ruling that the U. S. can not continue to prosecute a criminal antitrust suit against a corporate subsidiary if the subsidiary is dissolved or merged, and if the action takes place in a state where the law forbids continuing such suits.

Corporate Liquidation

IRS has determined the tax consequences of a corporate liquidation where the assets are distributed to stockholders in proportion to their ownership, one of them being a corporation holding over 80 per cent of the stock.

Government in Business

A Budget Bureau Survey has found that the Government is engaged in almost 20,000 commercial or industrial activities with total assets of nearly $11.9 billion.

Profit-Sharing Plans

An employe who continues to work for his employer after terminating his participation in a profit-sharing plan has not been separated from service; a distribution of the total amount standing to his credit in the trust is not capital gain.

State Action on Strikes

The Taft-Hartley Act provisions, according to a Supreme Court ruling, do not prevent state authorities from banning mass picketing, use of force and threats of violence by strikers. The high court said that "the dominant interest of the state in preventing violence and property damage cannot be questioned."

Tax Write-Offs Questioned

The staff of the House-Senate Economic Committee has questioned the advisability of allowing businesses to amortize defense facilities faster than normal for tax purposes. The staff asserts that continuing the program might unbalance the growth of the economy, cause a substantial loss in federal tax revenues in the next few years, and seriously affect the fairness with which the tax burden is distributed.

Plant Dispersal Plans

New standards for dispersing defense plants out of the reach of enemy bombs have been accepted by the Government. The action, taken by ODM, discarded the old "mileage" standard under which plants ten to twenty miles from a vulnerable enemy target will be considered safe. Standards to govern the eligibility of plants for government assistance will be drafted by the FCDA and enforced by the Office of Development of the Department of Commerce. New plants that have been put down in vulnerable areas without regard to the Government's wishes will not be eligible for special federal tax concessions. They also will not qualify for government defense contracts.

Income Tax

IRS announces procedures with respect to the qualification of pension, annuity, profit-sharing, and stock-bonus plans and related trusts; Rev. Rule 32, is superseded and Rev. Rule 54-172 is amended.

Corporate Tax

Corporations meeting certain ownership and acquisition requirements may now qualify for capital gains treatment with respect to proceeds from real estate subdivisions.

High Court Decisions

The Supreme Court has ruled that butchers cannot be required to sharpen their knives on their own time when sharp knives were indispensible to their productive activity. In a related case, the Court held that workers in a storage battery plant must be paid overtime for time spent changing their clothes, taking shower baths to protect them from contamination. Both operations, the Court held, are an integral part of the principal activity of the workers, not "preliminary" or "postliminary" to the regular tasks.

Better Late Than Never

IRS has revealed why the former rule requiring the defacing of cancelled tax stamps on cigar boxes and other tobacco packages was dropped from the 1954 tax code. Explanation: The rule served no useful purpose.

—BENJAMIN R. MAKELA

APPLYING RECORDAK MICROFILMING TO BUSINESS ROUTINES — NO. 14 IN A SERIES

More than a million credit checks a month . . .

but filing them this way is a snap

General Petroleum Corporation—the Socony-Mobil affiliate in the far west—cuts billing costs approximately 50% by photographing credit checks in a Recordak Microfilmer

In one minute the girl at the Recordak Microfilmer can file more than 300 credit checks on film.

This fast, low-cost operation allows many short cuts. Some, no doubt, might well be applied to your own routines.

Cuts paper work. Photographing the original Mobil credit checks eliminates the need for the carbon copies formerly kept as the office record. (The originals, as before, are returned to the customer with his bill.)

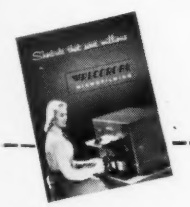
Handling only one paper record for every purchase—instead of two—saves time all along the line. For example, four days a month were formerly spent cleaning out drawers and labeling storage boxes.

Turns file space into office space. A year's supply of credit checks—on Recordak Microfilm—are now filed at the finger tips in four file drawers instead of in 1800 large boxes. A space saving of at least 98%.

Eliminates "can't find's." Now, when customers ask to see past records . . . they can be located in a matter of minutes, and viewed—or duplicated—in a Recordak Film Reader. Since the adoption of Recordak Microfilming there hasn't been a *single* case of a ticket not being easily found.

Permits centralized accounting. Branch offices now forward credit checks to home office where dual microfilm copies are made simultaneously—one set for branch. *Despite a three times' increase in ticket volume in recent years same staff easily handles the job!*

"Recordak" is a trademark



"SHORT CUTS THAT SAVE MILLIONS"

This valuable free booklet shows how Recordak Microfilming is cutting costs for over *100 different types of business* . . . thousands of concerns.

RECORDAK

(Subsidiary of Eastman Kodak Company)

Originator of modern microfilming—and its application to accounting routines

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Company_____

Street_____ City_____ State_____

Dudley E. Browne Elected President of Controllers Institute

DUDLEY EDWIN BROWNE, comptroller of Lockheed Aircraft Corporation, Burbank, California, was unanimously elected president of Controllers Institute for 1956-1957, effective September 1, at a meeting of the national Board of Directors in Pittsburgh on June 15.

The president-elect, who has been active in the Institute at both local and national levels since 1938, holds membership certificate #1259. As the new president, Mr. Browne rates the distinction of having the longest number of years service as an Institute member at the time of his election and with the exception of the Institute's first president, Frank J. Carr, he, at 43, is the youngest person to be elected to the presidency.

Mr. Browne served as president of the Los Angeles Control, 1946-1947; as vice chairman, 1948-1949, and chairman, 1949-1950, of the national Committee on Technical Information and Research; as a national director, 1951-1954; and as a regional vice president (Region X), 1952-1953. In addition, he is a trustee of Controllership Foundation and was general chairman of the 1955 Annual National Conference.

After graduation from University of California at Los Angeles with a B.A. degree in Economics, Mr. Browne began his career with Arthur Young & Company and remained there until he joined Lockheed in 1937 as auditor. In 1939 he rose to chief accountant and in 1942 became comptroller at the age of 29, the youngest officer in the company.

Mr. Browne is a member of the California Society of Certified Public Accountants, the National Association of Cost Accountants (former president, Los Angeles Chapter), American Institute of Accountants, the American Accounting Association, and Beta Gamma Sigma (honorary —commerce and business administration). He serves on the Advisory Board of the International Accountants Society, Inc.

OFFICERS AND DIRECTORS OF CONTROLLERS INSTITUTE 1956-1957

President
Dudley E. Browne, Lockheed Aircraft Corporation, Burbank, California

Chairman, Board of Directors
Robert N. Wallis, Dennison Manufacturing Company, Framingham, Mass.

Treasurer
Stuart W. McLaughlin, West Virginia Pulp and Paper Company, New York, N. Y.

Assistant Treasurer
Herbert M. Kelton, United States Rubber Company, New York, N. Y.

Secretary and Managing Director
Paul Haase, National Headquarters, New York, N. Y.

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(Regional vice presidents shown in italics)

Directors at Large
C. R. Fay, Pittsburgh Plate Glass Company, Pittsburgh, Pa.
George W. Schwarz, Wyandotte Chemicals Corp., Wyandotte, Mich.

REGION I
J. A. Chadbourne, Old Colony Envelope Company, Westfield, Mass.
Eric L. Hamilton, Canadian Industries, Limited, Montreal, Quebec
George L. Todd, The Bullard Company, Bridgeport, Conn.

REGION II
Charles H. Clifford, Albany Felt Company, Albany, N. Y.
George E. Hallett, Tung-Sol Electric Inc., Newark, N. J.
Nelson T. Hampson, Lowe Paper Company, Ridgefield, N. J.
Stuart W. McLaughlin, West Virginia Pulp and Paper Company, New York, N. Y.
John A. Paterson, The Brooklyn Union Gas Co., Brooklyn, N. Y.

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Raymond G. Lochiel, Capital Airlines, Inc., Washington, D. C.
Earl R. Uhlig, The Glenn L. Martin Company, Baltimore, Md.

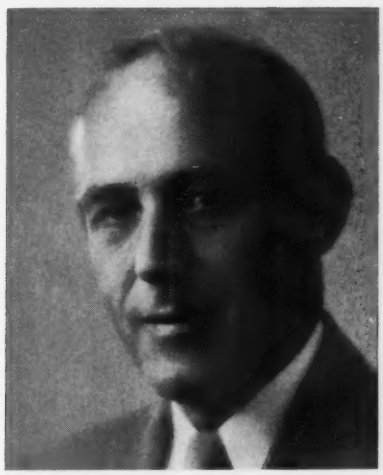
REGION IV
George H. Hetley, Harrison Radiator Div., General Motors Corp., Lockport, N. Y.
Mark Z. Hanlon, First Trust & Deposit Co., Syracuse, N. Y.
James A. Trainor, Commercial Controls Corporation, Rochester, N. Y.

REGION V
William C. Jones, Alabama By-Products Corporation, Birmingham, Ala.
C. C. Lay, The Wheland Company, Chattanooga, Tenn.

REGION VI
William A. Crichley, Diamond Alkali Company, Cleveland, Ohio
John S. Sturgeon, The Magnavox Company, Fort Wayne, Ind.
Roger A. Yoder, Detroit Steel Corporation, Detroit, Mich.

REGION VII
William B. Harrell, Louisville Tin and Stove Co., Louisville, Ky.
Edward M. Karrmann, American United Life Insurance Co., Indianapolis, Ind.
E. W. Weston, The Weston Paper and Manufacturing Co., Dayton, Ohio

Robert N. Wallis Elected Chairman of the Board of Directors



ROBERT N. WALLIS, treasurer and a director of the Dennison Manufacturing Company, Framingham, Massachusetts, was elected chairman of the national Board of Directors of the Institute for 1956-1957 at a meeting of the national Board of Directors in Pittsburgh on June 15.

Mr. Wallis, who has been active in the Institute since 1943, holds membership certificate #2457. From 1944 through 1949, he was an officer of the Boston Control, serving two terms each as treasurer and vice president and one as president.

He came on the national scene as vice chairman of the 1949 Eastern Conference. A year later, in 1950, he was elected national director from Region I and regional vice president. He was general chairman of the 22nd Annual Meeting, which took place in Boston in 1953. From 1953-1955 he served with distinction as chairman of the national Committee on Ethics and Eligibility Standards. He also rendered great service to the Institute as a member of the Joint Committee on Long-Range Research Objectives for Controllership Foundation, which presented its report in June 1952. He was national president of the Institute, 1955-1956.

Active for over 30 years in the National Association of Cost Accountants, he served as vice president of its Boston Chapter and as a director of its Springfield, Boston, Cleveland and New York Chapters. A graduate of Dartmouth College and the Amos Tuck School, he is class agent of the Dartmouth Alumni Fund. Mr. Wallis was recently made an honorary member of the Omicron Chapter of the national accounting fraternity, Beta Alpha Psi.

He joined Dennison as a cost accountant in 1925. In 1930 he was transferred to the Market Research Division and in 1937 became manager of the Merchandise Design Division. He was elected assistant treasurer in 1939 and a director in 1952. He has been treasurer since 1954.

REGION VIII

Carl M. Blumenschein, Container Corporation of America, Chicago, Ill.
L. E. Felton, Green Giant Company, LeSueur, Minn.
Harry C. Hahn, Wisconsin Telephone Company, Milwaukee, Wis.
John W. D. Wright, International Harvester Company, Chicago, Ill.

REGION IX

Allyn R. Bell, Jr., General Crude Oil Co., Houston, Texas
L. W. Bennett, Sunray Mid-Continent Oil Co., Tulsa, Okla.
Lewis E. Frensley, Magnolia Petroleum Co., Dallas, Texas

REGION X

Fred H. Brown, Macco Corporation, Paramount, Calif.
Murray S. Gelber, AiResearch Manufacturing Company of Arizona, Phoenix, Ariz.
W. T. McGillivray, California Packing Corp., San Francisco, Calif.
John O. Yeasting, Boeing Airplane Co., Seattle, Washington

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Paul Haase

Administrative Secretary
Arthur H. Wiedeman

Assistant Secretary
Benjamin R. Makela

Research Director—Controllership Foundation
Herbert F. Klingman

Office Manager
Norman W. Lothian

C. R. FAY NOW INSTITUTE DIRECTOR AT LARGE

C. R. FAY, vice president and controller of Pittsburgh Plate Glass Company, Pittsburgh, Pa., was made a director at large at a meeting of the national Board of Directors of Controllers Institute held in Pittsburgh on June 15, following his term as chairman of the Board, 1955-1956. Mr. Fay, who became a member of the Institute in 1945 and holds certificate #3408, served as national president, 1954-1955; as vice president of Region IV, 1953-1954; and as a director 1952-1955. He served as chairman of the national Committee on Social Security, 1951-1953, and was president of the Pittsburgh Control, 1950-1951. After graduation from Purdue University, B.S.M.E., in 1922, Mr. Fay started his career with the Weidly Motor Co. followed by the Thomas Skinner Steel Products Co. in Indianapolis. He joined Westinghouse Electric at East Pittsburgh in 1925 where he worked until 1942, when, on leave of absence, he was appointed to the WPB as consultant on the Controlled Materials Plan. On his return to Westinghouse in 1943, he was appointed assistant to the vice president in charge of Contract Terminations. In 1944 he became controller of Pittsburgh Plate Glass Co. and, in 1955, vice president, controller and a director.

WESTERN CONFERENCE COMMITTEE MEMBERS check notes. **Murray Gelber** (right), general chairman, talks to **Charles Bessenger** (center), chairman, Arrangements and Housing. Listening in are (left to right): **Clifford A. Clements,** chairman, Speakers' Hospitality; **Frank R. Amon,** chairman, Finance; **James A. Beaman,** chairman, Program; **James Dismuke,** chairman, Publicity; and **Robert W. Rehfeld,** chairman, Ladies Hospitality.

Data Processing, nning and Office Autation Two Conferences ontro

W E S T E R N C O N F E R E N C E

MECHANIZED ACCOUNTING, management planning and control, and electronic data processing were among the subjects on the program of the Western Regional Conference of Controllers Institute, held April 26-28 in the Arizona Biltmore Hotel, Phoenix, Arizona. The Phoenix Control sponsored the Conference.

J. C. FREEMAN:

Management planning and control at Dresser Industries, Inc., was discussed by its controller, J. C. Freeman, who noted that the combination of decentralized operating control and a central staff is consistent with Dresser's objectives of securing as many of the advantages of both large and small operations as can be had without the burden of the inherent disadvantages of either.

As background material, Mr. Freeman explained that the Dresser companies are joined together under a common ownership, serve common markets and conduct their operations in accordance with the Dresser basic operating philosophy. This philosophy means that the parent, Dresser Industries, does not manage the individual companies; rather, they manage themselves. The head of each Dresser company has complete responsibility and complete authority over his own operation. Each has its own financial, production, engineering, sales and purchasing staffs.

"At Dresser," the speaker added, "the organizational plan has been developed into what is commonly known as decentralized management. Operations are directed from the most logical and effective point, the local company level. Dresser's top management, with the assistance of the executive committee of the Board of Directors, establishes the broad policy framework within which the individual companies are free to operate.

"The Profit Plan is employed as a control down through the company levels of organization. It is used as a control tool in those instances in which divisional management is responsible for both sales revenue and associated cost levels. When divisional management is on a functional basis, separate revenue and cost center budget controls are established. The Profit Plan is prepared annually by each company president and presented to Dresser top management for review and approval prior to the beginning of the fiscal year. While the Plan is minutely conceived, it has two broad and basic elements: the long-range plan and the short-range plan. The details are summarized by the president in his transmittal letter to the operating vice president under two main headings. The first, the operating plan, includes sales and production. The second, the financial plan, includes working capital requirements, capital expenditures program, and net profit."

The speaker pointed out that the principle of management-by-exception is employed in all reports to expedite development of information, facilitate management fact digestion, and dispatch remedial action where and when indicated. Each month, two sets of reports are prepared—financial and operating. In the financial reporting, a flash report of operations is prepared on the fourth working day of the month from data transmitted by wire from the subsidiaries. This is followed on the fifth day by a brief letter highlighting the month's operations. On the seventh working day complete financial figures are due in Dallas.

CARLETON GREENE:

The economic growth in the West was discussed by Carleton Greene, senior economist, Stanford Research Institute, Phoenix. He told the group that the many forces which have contributed to the growth of the West will continue in the foreseeable future. None of these forces has slackened, while some will undoubtedly accelerate and a few are just barely beginning.

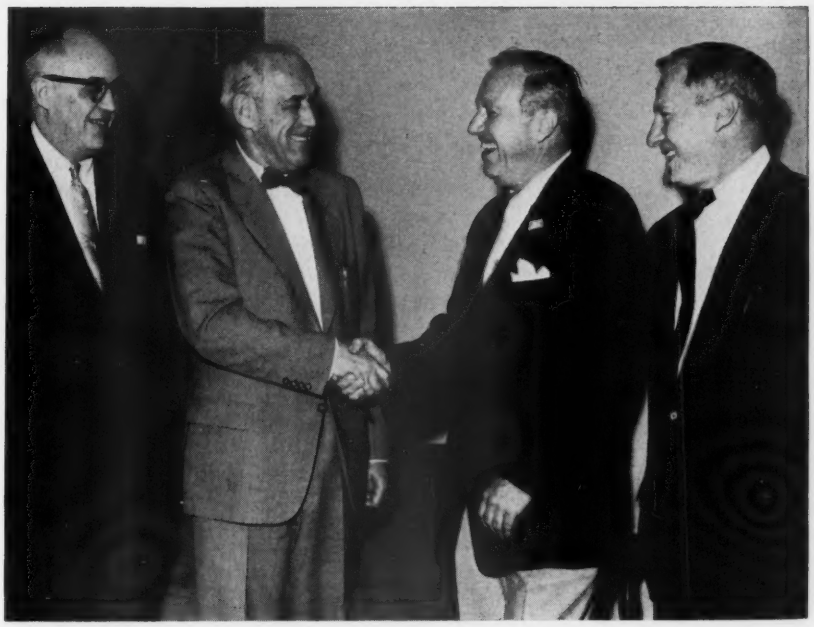
He noted that the movement to more amenable climates by people and industry is a world-wide trend. This trend could accelerate, rather than slacken, if national and international economic conditions continue at the present high level. In the field of building and construction, the need for homes, highways, and public and private facilities to accommodate postwar growth has provided much employment not found in stabilized areas. This activity will continue because the West has not yet caught up with its needs.

"Industries," he said, "have developed to cater to Western ways of living and Western methods of construction. Some examples are: sportswear and casual clothing, outdoor furniture, building materials such as concrete blocks, home heating and cooling equipment. Whole new industries are still to come.

"A renaissance is taking place in resource-based industries due to rapid strides in technological development. Examples are: petrochemicals, refining of low-grade ores, uranium, rare metals, and rare earths.

(Continued on page 348)

ng, nning and Control, ut ion Discussed at es ontrollers Institute



MIDWESTERN CONFERENCE

INSTITUTE PRESIDENT ROBERT N. WALLIS is welcomed to the 1956 Midwestern Conference by **E. W. Weston,** general chairman, who is secretary, the Weston Paper & Manufacturing Co., Dayton. Looking on are (left) **Roger A. Yoder,** a national director from Region VI, who is secretary-treasurer, Detroit Steel Corporation, and (right) **William A. Crichley,** vice president of Region VI and controller, Diamond Alkali Company, Cleveland.

OFFICE AUTOMATION, integrated data processing and management planning and control were the principal topics covered at the Midwestern Conference of Controllers Institute of America, held May 20-22 in the Dayton Biltmore Hotel, Dayton, Ohio. The Dayton Control sponsored the gathering, which included a special session in the offices of the Standard Register Company.

E. W. Weston, secretary, Weston Paper & Manufacturing Company, Dayton, who served as general chairman of the Conference, was elected a national director of the Institute at the annual meeting of members. Ten others were named to the Board: L. W. Bennett, treasurer, Sunray Mid-Continent Oil Company, Tulsa, Oklahoma; Carl M. Blumenschein, vice president and controller, Container Corporation of America, and John W. D. Wright, assistant comptroller, International Harvester Company, both of Chicago, Ill.; Charles H. Clifford, treasurer, Albany Felt Company, Albany, N. Y.; George E. Hallett, controller, Tung-Sol Electric Inc., Newark, N. J.; Eric L. Hamilton, vice president, Canadian Industries, Ltd., Montreal, Que.; C. C. Lay, treasurer, The Wheland Company, Chattanooga, Tenn.; W. T. McGillivray, controller, California Packing Corporation, San Francisco, Calif.; Earl R. Uhlig, vice president-finance and controller, Glenn L. Martin Company, Baltimore, Md. and John O. Yeasting, vice president-finance, Boeing Airplane Company, Seattle, Wash.

JAMES A. DOLLARD:

Three reasons why preparation periods of up to two years must precede installation of a large-size electronic computer were cited by the opening speaker—James A. Dollard, manager of the Customer Administration Program, Department of Education, International Business Machines Corporation, Poughkeepsie, N. Y. "First," he pointed out, "every detail of every operation must be recorded on paper and in the proper sequence. Almost every job requires hundreds, perhaps thousands, of subconscious operations.

"The second reason is internal resistance. People must be sold on the new approach. The heads of departments affected by automation must be assembled and told how they fit into the new picture. They must be told that, if they are worth their salt, they will never have to worry about a job and that, so far as is known, any technological change that has ever happened has always increased employment. It is estimated that computer personnel will double every ten years for the next three generations. Proper planning and cooperation with the personnel department over the two-year planning period will usually take care of any trouble resulting from reduction in force.

"The third reason, in many cases, is political resistance. One faction headed by a responsible executive believes the job should be done one way, another headed by an equally responsible executive believes it should be done another way. Perhaps it is centralization versus decentralization. Perhaps it is a matter of which area of the company should be the first to be mechanized. Someone must arbitrate—usually the president or vice president. To evaluate without bias, it is necessary that all factions be fully informed, and this takes time."

Lower costs attainable through automation, plus tremendous potentials in the use of operations research, linear programming, sales forecasting and similar techniques, are major reasons for executive interest in the subject today, the speaker explained. Paper work and population trends are other key factors. "By 1975," Mr. Dollard said, "there will be 225 million people in this country, and everyone will need shoes, clothes, houses, insurance and so forth. The larger part of this growth will involve the younger people and the older people. The labor force will be called upon to support more people in grander style than any other productive group in history. They will need the assistance of automation to help them in their tasks."

In an interesting aside, the IBM executive compared giant calculators and human brains. "References have been made to giant 'brains,'" he said, "when actually such machines can do no thinking whatever. They are morons without even sense enough to stop unless they are told. If wrong information is fed into them, they will produce errors faster than they have ever been produced before.

"The human mind is a marvelous instrument. You have a memory unit in the back of your head. It weighs about 3½ pounds, operates on less power than it takes to burn a 25-watt bulb and can be fed with half a carrot a day. It is able to store 15 billion units of information, which is three times the capacity needed to store all the records of our largest insurance company. If we tried to manufacture a similar storage unit, it would

(Continued on page 332)

Lessons Learned During Installation of a Large-Scale Computer

Excerpts from remarks before the American Management Association's Second Annual Electronics Conference and Exhibit, New York, February 27-29, 1956 by Albert C. Vanselow, Franklin Life Insurance Company, Springfield, Illinois

WE DETERMINED that for a medium-size company such as ours with approximately 400,000 policies and one billion of insurance in force it was necessary to embrace all functions involving highly repetitive tasks such as premium billing, premium accounting, dividend accounting, agency commission accounting, and valuation, if it was to be economically sound. There were numerous other procedures considered acceptable to electronic principles; however, we decided that the acquisition of a data-processing system was entirely contingent upon the success of the five major functions whereas the benefits of the other applications were considered a safety factor.

As our contract was the first commercial contract signed for a UNIVAC neither we nor Remington Rand knew whether the system was capable of handling all five of the functions mentioned and, even though it could, there was the important question regarding the ability of the system to process one day's work in a day. For this reason our contract and the entire installation has been a huge co-operative project. It was the many unknown factors in this new venture which led to the inclusion in the contract of a most comprehensive test using approximately 28,000 policies and running all programs for proving the timing, accuracy, and feasibility of the entire system.

Our entire approach has excluded the use of punched cards in that we feel we would limit the benefits of a computer system with a tendency to build the new system around the old and by using card-to-tape and tape-to-card machines we would increase the number of operations as well as our over-all costs. We also are of the opinion that card-to-tape and tape-to-card machines will become obsolete in the near future and be replaced by character recognition devices capable of reading printed or coded premium notices and checks and translating directly to magnetic tape at a high rate of speed. In the interim we have decided to Unitype directly to magnetic tape.

TRAINING PERSONNEL

We first selected four people from within our organization all of whom had a good life insurance background, were familiar with punched card procedures, and could think logically. As the survey progressed and a few additional people became available the original four were sent to Philadelphia and New York for a 12-weeks' programming course. Upon their return to begin the flow charting, coding, etc., of the new system we included the services of three Remington Rand programmers to not only program a few routines but primarily to assist in some technical problems as our people had very little experience in computer operation. It has been our experience that it is far easier to teach our own personnel to program than to teach outside programmers the life insurance business.

Although we were unable to release enough qualified personnel in the beginning for programming, we later conducted a six-weeks' programming class for eight people which was conducted by the person in charge of our project from Remington Rand. We have completed two additional six-weeks' classes in programming which consisted of eight people in each class.

I strongly recommend to any company contemplating or in the process of studying electronic data processing to select and train an adequate staff, keeping in mind not only new applications but also the preparation of conversion procedures and programs for greater efficiency shortly after your initial experience with production, and to provide supervisory personnel for the present and future.

Although Remington Rand has since established a maintenance service organization it is our belief and experience that we can service our equipment much more economically and provide more flexibility in our work schedule. In September 1953 we employed a chief engineer, a senior engineer (both with previous computer experience), two junior engineers, and four technicians. These men received specialized training for over one year, thus enabling them to adequately maintain the computer and all its components including Unitypers.

The third area of training is a group of 20 to 25 persons who will eventually code and check all manual data in preparation for Unityping onto magnetic tape. The various types of data which require such coding are new policies to be added to our files, all changes to existing policies, terminations from our files as well as numerous manual accounting entries. These persons were selected from their respective departments because of their knowledge and experience in processing such entries under our present system.

If we were to do the training job over again we undoubtedly would train not 10 programmers but probably 20 to 25 to

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provide adequately trained personnel to permit a shorter period of programming time. In following this approach it is most important to determine the required size of your permanent programming staff and the schedule to be met allowing adequate time for turnover, transfers, etc., to be certain you do not eventually complete your project and have an excess of highly paid programmers on your staff.

PROCESS SURVEY AND PROGRAMMING

Following the initial training of some of our personnel, we surveyed the various departments involved. Process analysis charts were prepared on a functional basis cutting across departmental lines in order to get a complete picture of each operation. This survey required approximately six man-years to complete, after which we were ready to plan and program.

As each program was flow-charted in the language of the computer we found it advisable to review the entire processing with interested department heads and other planning personnel to be certain nothing of major importance had been omitted. As each program was completed it was necessary for the programmer, together with his completed program and test data, to go to the Remington Rand plant in Philadelphia to "bug shoot" the program. This operation required from two days to one week depending upon the complexity of the program. This procedure was not satisfactory as the programmer had to work too far from "home base" and could not possibly take all his data with him. It was also a costly way to computer-check programs. We have found it to be far more convenient and efficient to be able to schedule time on our machine and in our home office as required and we recommend this method if it can be arranged.

TESTING

In proving in our programs, we have found it desirable when computer-checking a program to first test the routine with 100 to 200 prefabricated items designed to test all possible conditions and then to test the program using our 28,000 items of actual data which we consider to be a good cross section of our business. Once a program passes these two tests it is highly probable most conditions have been met; however, the final test will come only by continued use in actual daily production.

We have a total of 81 programs which includes our regular programs, sort and merge routines, and conversion programs. The time required to prepare these programs will total approximately 35 man-years.

Although "automatic programming" is a comparatively new technique whereby previously prepared instructions are selected, modified, and/or assembled automatically by the computer for use in a specific routine, we have found little value in automatic programming although we have used some general purpose routines with some modifications such as sorting, merging, consolidating, etc. In fact we have reduced the processing time of a few of our sort routines by one half.

RUNNING

Our UNIVAC was received on January 5, 1955 and final installation and testing were completed on March 14, 1955 when it was turned over to our engineers and technicians. Since that time we have run the system 24 hours per day and five days per week with a computer efficiency of approximately 90%. Our High-Speed Printer was received on April 1, 1955 and, although this equipment has not been used to the fullest extent, our experience has indicated an efficiency of well over 90% for two shifts per day.

We have reason to believe that we shall experience even better computer efficiency when we extend our work schedule to a seven-day-a-week operation whereby the computer will never be shut down except when required during a maintenance period. More component failures have been found immediately after the computer has been inoperative over a weekend than at any other time and in comparing notes with other UNIVAC installations this experience has been verified.

As our new master file will be in order by policy number within due day we are converting to the UNIVAC system on the basis of one due day at a time. Each due day consists of an average of over 20,000 policies. This method of conversion permits us to absorb each block of policies in the system and work out the "rough spots" before taking more. It also has a tendency to level out the work-load during the conversion period.

Although all dividend and policy loan programs have been completed and "de-

(Continued on page 326)

LOOKING AHEAD TO THE 1957 WESTERN CONFERENCE

The first meeting of the Executive Committee of the 1957 Western Conference of Controllers Institute, which will be sponsored by the San Francisco Control in that city on April 25-27 at the St. Francis Hotel, was held recently under the leadership of Wilson K. Minor, general chairman.

Seated in the above photograph (*left to right*) are Clifford L. Smith, chairman, *Publicity Committee;* H. Douglas Holcomb, vice chairman, *Inter-Control Attendance;* Oscar L. Snyder, vice chairman, *Ladies Hospitality;* William T. McGillivray, chairman, *Inter-Control Attendance;* John R. Lavinder, chairman, *Program;* Wm. Herbert Carr, *special advisor;* William R. Thomas, chairman, *Registration;* Charles L. Maule, vice chairman, *Registration;* Roy N. Dreiman, chairman, *Arrangements;* Arthur M. Wittman, vice chairman, *Housing;* and Victor L. Thomas, chairman, *Speakers Hospitality.*

Standing (*left to right*) are Thomas W. Parham, conference secretary; Stanley B. Murray, general vice chairman; Ben Makela, representative, New York Office; Wilson K. Minor, general chairman; John W. Hamilton, vice chairman, *Publicity;* and J. Philip Nathan, vice chairman, *Finance.*

Also serving on the committee, but absent when this picture was taken, are O. T. Jones, chairman, *Finance Committee;* Wagner d'Alessio, chairman, *Housing;* R. F. Tharp, chairman, *Ladies Hospitality;* D. I. McFadden, chairman, *Reception.*

Lessons Learned During Installation of a Large-Scale Computer *(Continued from page 325)*

bugged" they will not be used until the entire master file has been completely converted at which time this data will all be card-to-taped and merged into the proper fields in each master item. The daily processing of dividends and policy loans will then begin under the new system. We now estimate our conversion will require approximately 15 months to complete.

In view of the fact that our master item for each policy will contain 20 UNIVAC words or 240 digits, it is necessary for us to obtain approximately 120 digits of information, heretofore not included in any of our punched cards, from our manual records. We experimented with various methods of obtaining these data and we have found microfilm to be the answer.

As we are ready to convert a due day, all punched card data are run on the card-to-tape converter, after which, the Unityped information will be merged into the card-to-tape item to form the final master item. The result is our master file. On the average we are able to convert two due days (40,000 policies) every four to six weeks.

Originally we estimated our programs would require from 10 to 12 hours of computer time daily; however, our actual experience with our current volume of data indicates 12½ hours will be required excluding tape-handling time; therefore, we have scheduled two full shifts.

CONTROLS

Various controls have been included in our tape system, one of which is a running inventory of number of policies and amount of insurance for life policies and number of contracts and annual income for annuities for each due day. These totals are adjusted automatically as changes are applied. The totals will reflect the previous total plus or minus the changes and the new totals. The summarizing of the totals for all due days plus or minus the unapplied changes will equal the total business in force at the end of any day; however, we prepare our policy exhibit only at the end of each calendar month at which time all changes are applied to each due day and the entire master file run and totaled. Each due day is again updated when premiums are billed.

Another type of control used is that known as the "block count" (a block is 720 digits or 60 UNIVAC words) whereby, as data enter the system to be processed through the various programs, a block count is established and thereafter the computer compares this total at the beginning and end of each run until the processing has been completed to be certain no information is lost unknowingly. This system of control is not only used for accounting and change data but also in processing our master file and is most effective where the output of one run becomes the input for the next run.

COSTS

When giving consideration to costs versus savings we must realize that many of the initial costs such as conversion of data and training of personnel are for the most part one-time expenditures. Our costs for the training of programmers, engineers, technicians, preparation and computer-checking of programs, inventory of magnetic tapes and spare parts, test equipment, and installation of the UNIVAC system have to date totaled over $250,000. This figure excludes salaries. When we are in full operation (seven-day week) we anticipate the personnel in our Data-Processing Department will total approximately 55 to 60 people (excluding programmers) and will consist of 25 clerical coders, 15 engineers, technicians, operators, tape handlers, etc., and 20 Unitypists. In addition we will require an average of ten programmers for at least the first few years.

If we were to base our decisions for the future upon experiences of the past knowing what we do today about the capability and reliability of computer systems we probably would program one or two applications and begin realizing some benefits as soon as possible while preparing additional programs rather than preparing and testing programs for all applications under consideration before starting conversion as we have done. We now know what these monsters can do and we have found no limitations once the applications are determined economically sound.

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The American Economy's Strength

WHILE IT IS POSSIBLE that in the near future there may be a moderate decline in business activity, the long term of the United States economy will continue upward, according to Dr. Marcus Nadler, Professor of Finance at New York University. Dr. Nadler spoke at the opening session of the 11th Annual Conference for Senior Executives in Mortgaging Banking.

The elements of strength of the American economy are twofold: (1) Human, embracing not only the quality and character of the people but also the political institutions; and (2) material, embracing natural resources, productive capacity, and ability to create new products and methods of production and to steadily increase the general standard of living. The capacity of the American people to adjust themselves to change in economic and political conditions and their willingness to accept new economic philosophies and to improve on them are, perhaps, the strongest forces in the American economy. They assure a steady evolution without violent upheavals.

The American economy, Dr. Nadler noted, is also marked by a great dynamism which rests on demographic factors, research, and the willingness of management to take risks and to adopt new methods of production, distribution, financing, and new concepts of labor relations.

New markets for goods and services and an expanding demand for new housing and public works are created by the steady increase in the population of the country, accompanied by a material rise in the standard of living. The greater economic security of the people leads to a willingness to mortgage the future in order to satisfy present wants. While this tendency can have short-range cyclical impacts on the economy, in the long run it has contributed to the nation's economic growth.

Expenditures on research are constantly increasing. This is true not only in the field of atomic energy, which is financed primarily by the Government, but in all other fields as well. The huge outlays for research create new products, improve old ones, and increase the output of field and factory. Research also increases productivity and enables industry to pay higher and higher wages and thus to expand consumer demand. The willingness of management to take risks and to experiment requires huge amounts of capital. These sums are obtained partly from internal resources and partly from the large savings that are steadily accumulating in the country in one form or another. The forms of savings are undergoing significant change, especially in that contractural savings such as pension funds and insurance are increasing at a rapid rate and may soon surpass direct and voluntary savings.

The elements of short-range strength in the American economy which will prevent any decline which may take place in the near future from going very far or lasting too long are as follows: (1) The increase in disposable personal income based on rising wages; (2) unfilled orders in the hands of manufacturers, which are large and still increasing; (3) the growth of population and the rise in the standard of living, which constantly increases the demand for goods and services; (4) the pent-up demand for public works; (5) expenditures by corporations for plant and equipment, which are likely to be larger in 1956 than in 1955; and (6) a flexible credit and debt management policy.

The long-range strength, Dr. Nadler concluded, consists of human and material elements which are causing a new capitalistic system to evolve in the United States, the like of which has never before existed anywhere.

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Paging the New Books

ELECTRONIC COMPUTERS AND MANAGEMENT CONTROL*

By George Kozmetsky and Paul Kircher

Reviewed by F. WALTON WANNER
CPA and Systems Consultant
Standard Oil Company (New Jersey)
New York

The authors, from the academic and business worlds, have written a practical book in nontechnical terms which is a must on the reading list of forward-looking executives. The book deftly blends together the specific, but often superficial, problems facing the corporate financial executive with the broader and longer-lasting trend now made practical by the field of electronics, namely that of the scientific approach to management.

The entry of the much-publicized scientific approach, including the electronic computer and the formal application of fundamental mathematical techniques, into the world of the two-fisted, logical-thinking business executives has caused a barrage of opinions, claims, and counterclaims. Much of this material is in the realm of "blue-sky" thinking and brings with it a need for a down-to-earth coverage of the whole subject. The authors have met this challenge!

The contents of the book fall into three basic categories, each covering an important phase of the total problem:

1. Electronic Computers and Their Uses. Chapters 1 through 5.
2. A Study of the Scientific Approach to Management. Chapters 6 through 10.
3. Executives' Role and Challenge. Chapters 11 and 12.

In addition, the authors have presented a very well-indexed bibliography. This includes reference material in almost every specific phase of the three sections of the book; the characteristics of general and special purpose electronic data-processing systems; and, an illustration of a mathematical model.

Electronic Computers and Their Uses

The authors, taking a very realistic view of the basic executive responsibilities, have clearly set forth that the major impact of electronic computers is far more significant than the mere reduction of clerical costs. Most executives concerned with the controllership function in the financial world are interested in computers from the viewpoint of what they will accomplish in this field, rather than from the technical or research approach normally associated with engineering and scientific personnel.

Computers themselves are not new. They have been used in the academic and military worlds since the early stages of World War II. Their use as a management tool for solving business problems, however, was not accepted until a few years ago. In recognition of this need the authors have dissected the computer in a manner that is easily understood by the business executive.

The components of the electronic data-processing system, the functions of each, the input and output media, and the operating characteristics are explained so that the executive will be on speaking terms with his staff who are more intimately familiar with this new management tool. Executives, they point out, cannot achieve their goals of meeting competition and of serving the interests of their stockholders unless they are able to deal effectively with this new tool. The authors by no means promote electronic computers as the best answer to specific problems, but heartily endorse and *provide the means for the individual executive to study* this tremendous rapidly developing field.

The controller is usually the executive charged with the majority of the "data processing" for his company. Data processing has been defined simply as the transformation of happenings into concise and comprehensive management information. This is true, but only half the truth; the other half concerns the utilization of this information to forecast, plan, and direct the future corporate and business activities.

This portion of the book provides short but complete reviews of accounting

* *Published by McGraw-Hill Book Co., Inc., 330 West 42nd Street, New York 36, N. Y. $5.00.*

applications. These are illustrated by specific examples of electronic data-processing systems which have already been placed into operation by the "blue chip" corporations of America. Actual costs, statistics and other pertinent information recognizable immediately to the controller, are analyzed. Applications in accounting include cost analysis, and general conclusions on such subjects as: payroll; the processing of receivables and payables; factual analysis of billing procedures; and, general and cost accounting. In this discussion the technologic advances and some of the unsolved problems are clearly stated. Further discussions regarding inventories and sales; production control and scheduling; and, basic document handling are outlined. Personnel aptitudes, problems, rearrangements, and experiences in programming are developed. The importance of the proper placement of responsibility in the organization structure is stressed.

To summarize the first part of the book, the authors' purpose is clearly to assist the executive by describing in his own language the major characteristics of electronic systems and the new methods of analysis of complex business problems. These, when correlated with the basic concepts of administrative management and control to the degree dictated by common sense, will place the executive in a position to obtain economic benefits for his organization and advance its position in this competitive era.

A Study of the Scientific Approach to Management

The business executive, including many of those interested in the controllership function, has frequently shied away from the acceptance of the scientific attitude toward business problems and its collateral support consisting of mathematical techniques. There is no functional mathematical method or group of methods of primary importance for business use. There are, however, a number of tools written in the mathematical language which are useful to a capable analyst and should be basically understood by the executive. Among these pointed out by the authors are linear programming, dynamic programming, the information and communication theories, the Monte Carlo method, the Servo theories, the scientific use of simple, mathematical models such as the predictive models, and the decision models explained in terms which those in the field of controllership will readily understand.

The use of mathematical models in solving business problems has been made practical as a result of the high-speed computers referred to in the first section of this book and which are now becoming available to general business activities. Heretofore, they have been somewhat mysteriously closeted among the academicians and discredited as being "long hair."

The opening of this new world of mathematical concepts, as old as the age of Newton, now provides management with significant planning and control processes which are practical for overcoming many of the heretofore accepted difficulties and problems inherent in planning and management control. The management relationships involved in the problem of centralization and decentralization with the resulting developments are reviewed.

The scientific approach they propose is simply the application of accepted and known principles and techniques to the problems of the business world. Scientists, familiar with the complexities of their world, have been astounded at the extensive complications in business problems.

The essence of the scientific approach in business is the development of policies and procedures that can be steadily improved by observation and experiment. Efficiency of operation and maximization of profits are among the prime motives of every executive. These objectives are not easy to attain as the result of psychological and technical difficulties. People resist change, and planning and control projects frequently run into a number of technical difficulties. Adequate and inadequate means of evaluating these performances together with organizational problems are reviewed.

Programming, the formal objective defining, measuring and analyzing all the relevant factors in business situations which will lead to the attainment of the company's objectives, is very carefully explained. Clean-cut definitions of programming, scheduling, and feed-back are established. The strategy, technique, and development of the programming concept are reviewed.

Accountants, for years have based the selection of cost centers, for example, on the criteria related to the simplicity of application of direct costs of a product. Seldom have these been established on a truly scientific basis. Much data have been compiled and evaluation attempted simply because of the ease of compilation rather than because of the relationship of the data to the real objective of management.

The integration, transmission, and communication of data are drastically retarded by difficulties in semantics. The institution and acceptance of a common language to increase management effectiveness through the timely analysis needed for decision-making are explained in detail. Illustrations of specific companies' advances through the assistance of electronic equipment, and the limitations and obstacles of automation are also reviewed.

The authors clearly point out that the future of electronics and mathematical techniques in business is not limited to data processing and decision-making but, also, that its use is an important factor relative to the automatic handling and processing of materials. The need for in-

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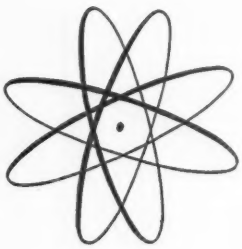

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tegration of information across functional departmental lines, as heretofore commonly understood, and its bearing on an integrated electronic system is comprehensively reviewed.

The Executives' Role and Challenge

The opportunity of the executive lies in his ability to achieve sound economic procedures and in effective management planning and control. Too often, the actual selection of a computer has been treated as the major if not the only portion of the executive responsibility in this field of endeavor. This is not the case, it is only a part—a major part, it is true—of the whole problem of developing and supplying management information. The authors recognize that there are a number of primary reasons for justifying a specific computer for data-processing problems and they endeavor to aid him in the performance of the real duties for which he is responsible. The authors review a number of reasons why specific computers were chosen for a given installation. On the other hand, it is well known that some companies have delayed selecting a specific electronic data-processing system. The reasons for such delays are examined in the light of the diversity of experience developed.

What support should management have in selecting the computer?
Who should head the team?
How about the project?
What about the internal attitude?
What are the potential applications?
Do we really need economic feasibility?
How about justification?

These and many other topics are included in a very practical analysis of the challenge to the executive.

The recognition by the authors of an age-old saying indicates their respect of the business executive's problem—"Be not the first by whom the new is tried, nor yet the last to cast the old aside."

PROVIDING FACTS AND FIGURES FOR COLLECTIVE BARGAINING

It gives the basic and unchanging points on: Who should be the company negotiator; how to keep and use records; how to prepare "fact books"; what financial implications are involved in pensions; how to determine the base period; what subjects to present at the bargaining table; how to avoid inconsistency in interpreting facts; what form to use to present facts.
Published 1950

$5.00

($3.50 to members of Controllers Institute of America)

CONTROLLERSHIP FOUNDATION
Two Park Ave., New York 16, N. Y.

U. S. Standard of Living May Rise 70% by 1996

AMERICA'S STRIKING GROWTH and tremendous potential are graphically presented in "40 Years of Economic Growth," a chart story in color prepared by the National Industrial Conference Board. John S. Sinclair, president of the Conference Board, notes that "the eyes of industry, labor and government alike are directed more than ever toward the brighter tomorrow, with future economic growth taken almost for granted. Each day it seems that a higher goal of potential achievement is held before the American public for the decade or more ahead."

The chart survey points out that the nation's output of goods and services, valued in constant 1947 dollars, has increased about 3% a year during the last half century. By 1955, it reached $319 billion—roughly three and one-half times its level 40 years earlier. If the rate of increase is maintained, national output 40 years from now will be a trillion dollars in terms of 1947 purchasing power, or about $1.2 trillion at today's price level.

There will be more than 300 million Americans in 1996, provided population continues growing at its recent rate of 1½% a year. (We now number over 167 million—35 million more than in 1940, when our current population boom started.)

Living standards (as measured by personal consumption) will be about 70% higher in 1996 than they are today, even though almost twice as many Americans will be around to share in the nation's abundance.

About 25 million workers entered the nation's labor force between 1920 and 1955. If current population forecasts are correct, another 25 million will be added by 1975 and will bring the total up to nearly 92 million. This means that the U.S. work force will have more than doubled in half a century, an increase in keeping with the rise in total population. According to the chart book, the increasing employment of women has made a striking change in the composition of the work force. In 1920, NICB notes, fewer than one of every four women over 14 years of age worked. In 1955, the proportion had risen to one in three. By 1975, it will be almost two out of five. In 1920, women made up only a fifth of the labor force; by 1975, they will account for more than a third of all employment.

American families have climbed steadily up the income ladder, even after allowance for inflation. Two developments are particularly striking. One is that the number of families in the lowest income bracket (gross incomes under $2,500 a year) dropped from 58% of total families to less than 23% between 1910 and 1953. Over the same period, the proportion of families in the $5,000-$7,500 bracket has risen from 4% to 25%. The "middle-income" ranks would be even larger, the Board notes, if incomes were measured on an after-tax basis.

The Conference Board chart book reveals that production workers in manufacturing earned, on the average, $76.52 a week for 40.7 hours of work last year, compared with $12.63 for 49.0 hours in 1916. In addition to fatter paychecks, many factory workers get medical care, insurance, pensions, and other "extras" which they did not receive 40 years ago. Despite inflation and higher income taxes, the American worker's level of living has been steadily rising. After adjustment for price changes and taxes, the factory worker with a wife and two children took home 2¼ times as much in 1955 as he did in 1916. Increased wage rates, NICB points out, have been largely responsible for the gains in money income since 1916, but shifts in the distribution of our labor force by industry, by skill, and by age have also helped move average earnings upward.

The Conference Board chart book points out that within a short period of time our economic system has converted costly luxuries into common conveniences. In 1916, for example, only one out of ten families owned an automobile. Not only do most families own one today, but in recent years an increasing number of families—now almost 10%—own two cars or more. At the beginning of 1956, 97% of our families owned radios, 90% had electric refrigerators, 80% owned electric washers, and 72% could watch television on their own sets.

As real income rose over the past 40 years, relatively less had to be spent for food, clothing and housing, which can be regarded as approximating basic living needs. After meeting these needs, the average city worker's family in 1950 had 42.8% of its income left for "optional" purchases—such as automobiles, appliances and recreational items. This compares with only 22.1% budgeted for optional spending in 1917-1919.

Great strides have been made during the past 40 years toward providing more education for the nation's children. In 1915, according to the chart book, only 20.5% of our youngsters aged 14 to 17 attended high school. Today, 80.3% of persons in this age group are enrolled in secondary schools, and the proportion is expected to rise to 83.3% by 1965. The percentage of college-age persons in universities, colleges or professional schools has also mounted sharply over the years—from 5.4% in 1915 to 32.0% in 1955.

While almost everything about America has grown enormously in the last 40 years, the growth and cost of government has outstripped just about everything else. For example, although our national income has jumped 422% since 1922, the total tax burden is now 968% greater. It would be even higher if our annual contribution of $11 billion for social insurance were included. Government, the Conference Board chart survey points out, has not only grown as we have grown, but it has had to pay for wars and their aftermath of rehabilitation and pensions, peacetime defense needs, and broadened services. Also, the very growth of the country has required greater public spending for roads, schools, and community facilities.

Although vast amounts were borrowed to meet rising costs, increased income taxes have provided the bulk of the funds needed by government. NICB notes that in 1922, only three out of every ten dollars in tax receipts came from levies upon income; the proportion is now exactly double. Last year, $48.6 billion was collected in income taxes—$14 billion more than the corresponding peak assessment in World War II.

The Conference Board's chart book also shows that total debt has risen in all but five of the past 40 years. Last year, the most prosperous we have known, our debt rose nearly $50 billion, largely under the impetus of heavy private borrowings. At the end of 1955, our debt came to $3,900 for every person in the country—five times that of 1916. NICB notes that while our traditional willingness to borrow against future income has made a fundamental contribution to America's growth, the $650 billion debt we now carry poses challenging problems for the decades ahead.

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Midwestern Conference

(Continued from page 323)

take a building as large as Grand Central Station, all the power that is supplied to the city of Washington, a billion tubes and a billion relays. No one will ever build a machine to come anyway near the human mind, because it is a million times more complicated than any machine that can ever be built."

P. B. GARROTT:

The use of "common-language" machines was explained in detail by P. B. Garrott, director of Application Research of Standard Register Company. Speaking at that firm's headquarters, where the Monday afternoon session of the Conference was held, Mr. Garrott defined integrated data processing as "a plan for making more automatic the recording, transmitting and reuse of necessary business information, by the logical use of any data-handling device or method, be it mechanical, electrical or electronic in nature.

"One of its prime purposes," the speaker added, "is to reduce the danger of human failures by reducing the degree of direct human participation in the processing of vital business information. Another is to provide that information more quickly wherever it is needed, and in the form it is needed."

LOCAL CONTROL OFFICERS AND DIRECTORS meet in Dayton. Seated (left to right): **George A. Bricault,** treasurer, Cincinnati Control; **Arthur J. Sowers,** president, Dayton Control; **Robert N. Wallis,** president, Controllers Institute; **Paul Haase,** managing director, Controllers Institute; **Harry C. Hahn,** vice president, Region VIII; **Joseph C. Huehn,** vice president, Region VII; **Charles E. Ehrhardt,** director, St. Louis Control; and **Harold L. Hale,** vice president, Cleveland Control.

Standing (left to right): **Wilford D. Sawyer,** president, Western Michigan Control; **Earl J. Wipfler,** secretary-treasurer, St. Louis Control; **Paul R. Langdon,** vice president, Columbus Control; **Merle E. McLeod,** secretary, Columbus Control; **Bruce S. Shannon,** president, Cincinnati Control; **Charles M. Billman,** first vice president, Dayton Control; **William G. Barth,** vice president, Cincinnati Control; **Frank S. Slick,** president, Toledo Control; and **C. G. Phelps,** director, Western Michigan.

Mr. Garrott cited a stock purchase as one example illustrating the amount of paperwork duplication which occurs daily in business. "A requisition is written," he said, "to include such obvious things as part number, description, quantity needed, date needed and point of delivery. The same essential facts are repeated on requests for quotations, and again on the resulting purchase order, and again upon receiving reports. Half a dozen different records and half a dozen clerical transcriptions of the same basic, common data are not unusual to such operations.

"This is not needless duplication. The same basic information, in written form, is necessary at every step to tell the people at each point what they are dealing with and what they are expected to do about it. The needless waste occurs as a result of the means used to prepare and deliver necessary facts to those key people. Integrated data processing offers a means of 'mechanizing' the processing of necessary repetitive information, through what has come to be called the common-language idea. It provides means of translating a message from handwritten to punched card form, and of making them automatically by means of a data-coding system."

The speaker offered two rules for guidance in approaching the subject of integrated data processing, keeping in mind the general characteristics of common-language machines and the interchangeability of information through use of such media. "Record reusable data as early as possible on office machines which create some form of data-perpetuating record," he advised. "Process such data on office machines which may be operated by, and which also may produce, other data-perpetuating records.

"Relating these rules to the example of stock ordering, if the stock clerk at the point of origin records requisition data on a tape-punching typewriter and sends the tape with the purchase requisition to the purchasing department, then requests for quotations might be prepared largely by automatic operation, using another common-language machine there. Another by-product tape, resulting from requests for quotations, could serve to prepare the purchase order automatically—either by operating a common-language typewriter to type the order, or by converting automatically into punched card form for punched card accounting machine use, or for use as input to an electronic data-processing device."

Mr. Garrott's address was prefaced with introductory remarks by M. A. Spayd, president of the company.

OFFICERS AND TRUSTEES OF CONTROLLERSHIP FOUNDATION met with invited guests during the Midwestern Conference at Dayton, Ohio. Seated clockwise are: **William B. Harrell,** comptroller, Louisville Tin and Stove Co., Louisville, Ky.; **George W. Schwarz,** immediate past chairman of the board, Controllers Institute, and vice president and general manager, General Products Division, Wyandotte Chemicals Corporation, Wyandotte, Mich.; **C. R. Fay,** chairman of the board, Controllers Institute, and vice president and controller, Pittsburgh Plate Glass Co., Pittsburgh, Pa.; **Dudley E. Browne,** comptroller, Lockheed Aircraft Corp., Burbank, Calif.; **Herbert F. Klingman,** research director, Controllership Foundation, Inc.; **Mrs. Betty Lawrence,** secretary to the managing director.

Paul Haase, managing director, Controllers Institute; **J. McCall Hughes,** president, Controllership Foundation, Inc., and vice president and controller, Mutual of New York, New York; **Robert N. Wallis,** president, Controllers Institute and treasurer, Dennison Manufacturing Co., Framingham, Mass.

Charles E. Ehrhardt, assistant controller, Anheuser-Busch, Inc., St. Louis, Mo.; **Mark Z. Hanlon,** secretary and comptroller, First Trust & Deposit Co., Syracuse, N. Y.; **T. Cecil Davis,** comptroller, St. Regis Paper Co. (Canada), Ltd., Montreal, Que.; **Ralph H. Smith,** controller, The Cleveland Electric Illuminating Co., Cleveland, Ohio; and **James L. Peirce,** vice president and controller, A. B. Dick Co., Chicago, Ill.

NEW INSTITUTE OFFICERS

At the meeting of the national Board of Directors of Controllers Institute held on May 21, 1956 in Dayton, Ohio, the following officers were elected to serve beginning September 1.

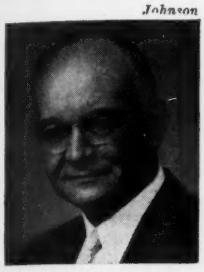
★

STUART W. McLAUGHLIN
Treasurer & VP Region 2

HERBERT M. KELTON
Assistant Treasurer

REGIONAL VICE PRESIDENTS

★



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RAYMOND G. LOCHIEL
Region 3

MARK Z. HANLON
Region 4

WILLIAM C. JONES
Region 5

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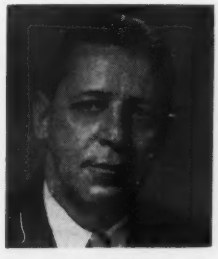
Region 6

WILLIAM B. HARRELL
Region 7



L. E. FELTON
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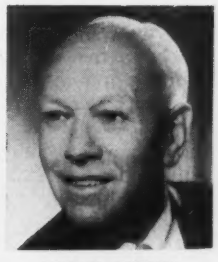
ALLYN R. BELL, JR.
Region 9



FRED H. BROWN
Region 10

HEINZ PANEL:

A four-man symposium on the over-all management planning and control system employed by the H. J. Heinz Company, Pittsburgh, Pa., constituted an entire morning session on the second day of the Conference. R. B. Gookin, comptroller of the company, began the case study by sketching in the background. He was followed, in that order, by F. M. Brettholle, department manager, profit planning; L. V. Leggate, department manager, cost estimating, and H. W. White, department manager, cost accounting.

Gookin:

"The general policy of our Comptroller's Division," Mr. Gookin explained, "is to be constructively active in developing the planning operations throughout the company and also helpful in the control features of our operation. We are completely responsible for putting together the company's profit budget and cash plans, and for measuring results, by divisions, against these programs. We obtain all information from the divisions involved. Essentially, the program is one of putting together plans originated by others. We attempt to furnish all information possible for divisions to prepare intelligent plans.

"We try to help develop the strong points of all divisional plans and consistently and constructively try to take out the weak elements and to clarify and supplement the fuzzy or incomplete areas. We never take credit for good current actual performance of any division in any way. Rather, we aim our efforts toward getting more profitable plans adopted and pointing up ways of meeting these plans and improving actual results against them. We implement this approach by emphasizing the probable future action that should be taken to avoid failures to meet past standards, or any poor performance that has taken place and is a matter of history.

"Perhaps our philosophy can be summed up by saying that we make every attempt to reduce the fire-alarm approach to problem solving. We are encouraging a further system of checks and balances, which has proved helpful in reducing the number of off-the-cuff plans and decisions."

Mr. Gookin outlined the functions of his company's Sales Accounting Department; General Accounting Department; Centralized Accounts Payable Department, and Electronic Data-Processing Department. The last-named has completed a feasibility study which indicates that the company has an economically sound application for a large-size computer. "We are now in the first stages of organizing a 12-man staff to prepare detailed procedures of six basic operations in our com-

(Continued on page 334)

HEAD TABLE GROUP at the Closing Luncheon at Midwestern Conference. Seated (left to right): **Norton McGiffin,** chairman, Arrangements committee; **Raymond Sadler,** chairman, Publicity; **Robert N. Wallis,** president, Controllers Institute; **Irv Wermont,** speaker; **C. R. Fay,** chairman of the board, Controllers Institute; **E. W. Weston,** conference general chairman; and **Josiah V. Colley,** chairman, Program.

Standing (left to right): **Leonard J. Ertel,** chairman, Speakers' Hospitality; **Herbert F. Klingman,** research director, Controllership Foundation; **Russell F. Cosby,** second vice president, Dayton Control; **Collis W. DeHaven,** secretary, Dayton Control; **Richard M. Hall,** director, Dayton Control; **Warren Webster,** chairman, Housing; **E. F. Campbell,** chairman, Ladies' Hospitality; **Charles M. Billman,** chairman, Finance; **E. Gerhard,** chairman, Inter-Control; **Arthur H. Wiedeman,** administrative secretary, Controllers Institute; **Donald A. Robertson,** general chairman, 1957 Midwestern-Southern Conference; and **Lawrence S. Wiley,** treasurer, Dayton Control.

Midwestern Conference

(Continued from page 333)

pany for programming and application to a centralized large computer system," Mr. Gookin reported. "This group has also considered the feasibility of connecting all our physical locations with punched paper tape or other means of communicating detailed information, but we have not decided on taking this step at the present time. We feel sure that this area of work will be of tremendous importance to the company over the next five to ten years, and that we will be successful in cutting across divisional lines for all types of reporting, so that the reporting operation will be done with maximum efficiency."

Brettholle:

The Profit Planning Department's activities were outlined by Mr. Brettholle, who said, "Our primary role in the development of the company's profit program is that of coordinating the various divisional and departmental plans into an over-all and integrated profit program, and to see that it is consistent with basic company objectives and policies. We have the responsibility to formulate the techniques and methods whereby the program can be developed and implemented in an orderly and organized manner. We also assist in every way that we can each division and department in planning and developing their respective budgets and standards. We supply and interpret historical and statistical information."

Starting with the profit objective for the year, Mr. Brettholle traced the various steps involved in achieving a fiscal year profit plan. Budgets are obtained from the various departments; a production schedule is established; freight costs are estimated; sales branch locations forecast their expenses, and the advertising and promotion budgets are set up. The program also includes capital expenditure planning, inventory planning and a cash budget. After the plan is completed and approved by the board of directors, the Profit Planning Department issues monthly statements, charts and tables to focus management's attention on factors which influence profit accomplishment.

"While we do not change our planned profit program once it has been approved for the year," Mr. Bretthole added, "control, as such, is not used as a restrictive measure or pressure device in that it thwarts initiative, risk taking, justified salary increases, additional promotion plans or increased capital expenditures. Control, as we try to employ it, is more of a disciplined effort to follow the plan. If the interests of the company warrant breaking the budget, and if those who advocate it can present a reasonable justification, permission to do so would probably be granted. Thus deviations may be voluntary, foreknown, and authorized, but they are spotlighted early, their effect on the profit period recognized, and appropriate action taken when necessary."

Leggate:

Mr. Leggate told how his department services all divisions of the business, by obtaining costs and related data. "We are frequently called on by the Purchasing Division," he declared, "to prepare break-even charts on the purchase of raw versus processed ingredients. Sometimes our buyers want to know the relative economies of purchasing a partially processed material as against doing the processing ourselves. In special cases our Production Planning Department, in conjunction with the Manufacturing Division, will want to know the best production location alternative to existing scheduled plans to attain the lowest customer delivered direct cost. Occasionally our Sales Department will ask for the comparative economics of transshipping some merchandise where a limited supply has become inequitably distributed versus producing the item out of higher-priced market ingredients.

"Probably our most important service to management is found in our relationship to product managers. These men work for the vice president of marketing and are responsible for the development of products, packages, prices and sales goals, as well as of promotional plans which will produce maximum profitable sales for assigned product groups. They constantly analyze the major factors affecting product costs and recommend action to the appropriate divisional management to make the attainment of profit objectives possible. The product manager has a hand in all areas affecting product profit and cost."

White:

Standards and budgets at Heinz are established by the personnel at each factory, subject to later review and approval of the Home Office. As Mr. White pointed out in his remarks, "They are the ones who best understand the operations, the machines and processes and, of course, the human element of the operation. Each factory and district location is unique in its problems of yields, labor efficiency and machinery. By permitting individuality in establishing standards and budgets, we invite realism and a true picture of operational results, plus a livelier interest from our supervisory personnel. They are the ones who make or break production volume and cost goals.

"We are continually planning for the future of this program by giving more authority to the factories in establishing their goals. Final approval rests with the Home Office, where we have developed a system of approval which includes close reviews of standards and budgets with the regional factory manager.

"A Cost Committee is active at most factory points, large enough to represent the major expense centers, yet small enough to allow efficient, quick action when necessary. Each is headed by the factory comptroller, and the typical personnel includes the production manager,

factory engineer, manager of transportation and warehousing. Other individuals are invited to certain sessions as specific problems regarding their area are discussed. Regular weekly or bi-monthly meetings are held to discuss such matters as variance reports, productivity trend, overtime and labor operations, method changes, yield trends, etc.

"At the factory level we produce, for cost control purposes, daily variance reports for production and service departments. Copies are placed in the hands of departmental supervisory personnel, as well as of the staff member responsible for the department, by 10 o'clock of the following workday. Significant variances are investigated and explained to the factory manager, as well as reasons being written on the foreman's diary book."

DEAN ARTHUR R. UPGREN

Three ways in which the national economy has been doing "better than you think" were emphasized by Dean Arthur R. Upgren of the Amos Tuck School of Business Administration, Dartmouth College, who discussed the business outlook. The first of these, he said, is in the matter of inflation, which has been no threat for the past five years. The second is in the realm of average family income, which has risen from $4,000 in 1945 to $5,650 last year; by 1960, according to the Twentieth Century Fund, it will be $6,125.

Bank liquidity, Dean Upgren said, is the third way. "In the past," he recalled, "we have always run out of money. All our deep depressions reached their greatest depth when we had a complete collapse of the money supply. It will not occur again in the discernible future, because we have built up bank liquidity to levels twice as high as the best in good times prior to the 1930's. In mid-1954, liquidity of all the banks under the jurisdiction of the Comptroller of the Currency was 61 per cent. In addition, liquid savings have been greatly increased. Business working capital is at its all-time maximum. Individual and liquid assets have been built up to a total above $350 million.

"We have a built-in stabilizer in our system of federal taxation. It works automatically without need for act of Congress or administrative decision of the President. Through pensions, unemployment compensation and retirement benefits, we have workable systems for protection of incomes to the unemployed and aged. The outpayments to the unemployed in the mild recession of 1954 were substantial and were the second sustaining force to incomes."

Mayor Henry S. Stout of the City of Dayton welcomed the controllers at the luncheon on Monday, at which Arthur J. Sowers, president of the Dayton Control and treasurer, Univis Lens Company, Dayton, Ohio, presided. The guest speaker at the banquet was the Rev. Laurence H. Hall, rector of St. Paul's Episcopal Church, East Cleveland, Ohio. The Conference closed with a luncheon at which Irv Wermont entertained with his celebrated demonstration of "Psychology in Action." Robert N. Wallis, president of Controllers Institute and treasurer, Dennison Mfg. Co., Framingham, Mass., presided at the banquet; C. R. Fay, chairman of the national board of directors, who is vice president and controller, Pittsburgh Plate Glass Company, Pittsburgh, Pa., introduced Mr. Wermont. Others who had charge of sessions included: William B. Harrell, comptroller, Louisville Tin & Stove Co., Louisville, Ky.; Joseph C. Huehn, comptroller, American Brake Shoe Company, National Bearing Division, St. Louis, Mo., and Edward M. Karrmann, treasurer, American United Life Insurance Co., Indianapolis, Ind.

News of Other Financial Organizations

Winners of the Lybrand Award Gold and Silver medals, honoring the authors of the two most outstanding contributions to the literature of industrial accounting during the past year were:

First-place Gold Medal—Eugene R. Donat, computer programming analyst with Collins Radio Co., Cedar Rapids, Iowa, for his paper entitled "A Progress Report of Our Computer Installation."

Second-place Silver Medal—Leland G. Spencer, specialist in budgets and measurements, Plastics Dept. of the General Electric Co., Pittsfield, Mass., for his paper entitled "Considering Length of Run in Product Costing."

In addition to the Gold and Silver Medals, 25 certificates of Merit were provided by the partners of the public accounting firm of Lybrand, Ross Bros. & Montgomery. Members of Controllers Institute who were awarded certificates of Merit were:

Lansdale Boardman, Scovell, Wellington & Co., New York—"What It Means to Integrate Data Processing."

Peter M. Chiuminatto, Charmin Paper Mills, Inc., Green Bay, Wis.—"Is Direct Costing the Answer to Better Management Accounting?"

Sterling K. Atkinson, Temple University, Philadelphia, Pa.—"Short- and Long-Range Consultations in Cost Analysis."

Ernest A. Carlson, Johnson & Johnson, New Brunswick, N. J.—"Management Accounting in Action."

E. Stewart Freeman, Cambridge, Mass. —"Measuring Investment and Income."

James A. McFadden, Jr., RCA Laboratories Div., Radio Corporation of America, Princeton, N. J.—"Organizing New Product Development."

One of the three-man committee which selected the awards was Donald M. Magor, vice president and controller of the York Corporation, York, Pa., who is also a member of Controllers Institute.

•

The concept of controllership was introduced in the United States Air Force some ten years ago. Since then its advance has been progressive and today controllership is regarded by top management and commanders throughout the Air Force as an essential and important service to management.

The Deputy Chief of Staff, Comptroller conducts at headquarters of the USAF an Executive Development Program which includes bi-monthly forums at the Pentagon involving talks by experts in financial management from industry, universities, and other governmental agencies.

Speakers in the 1955-1956 program included two members of Controllers Institute, G. Stewart Phillips, comptroller, assistant secretary and assistant treasurer, The Washington Post Company, Washington, D. C., and Charles A. Agemian, vice president and deputy comptroller, Chase Manhattan Bank, New York. Mr. Phillips spoke on "Controllership and the Newspaper Industry" while Mr. Agemian spoke on "Controllership in the Banking Industry."

Lieutenant General Charles B. Stone III and Mr. Phillips

Mr. Agemian and Lieutenant General Manuel J. Asensio

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Dr. Fred S. Cook
P. O. 353, Palo Alto, Calif.

Long-Range Planning *(Continued from page 309)*

ket lines. A new market for an existing product or a new product for an existing market gains more weight in our judgment than projects which are brand new in both respects. I might add that in my judgment it is much harder to sell a product than to make it, and more weight should be given this in the determination of a new product or a new line than I feel is sometimes the case.

Weighing these factors in the evaluation of a long-range objective is difficult at best. The important thing is that the facts be available to management so that it can make as intelligent a decision as possible. While we are on this subject I might mention that there is a tendency to establish standards for some of these criteria. For example, we have come to feel that a return on gross assets employed of about 20% before income tax (or about 10% after tax) is a reasonable goal on the average in our business. Some projects we feel should return a greater percentage if they are relatively short-term and unstable in nature. Others might be checked in at somewhat less than that return if they show promise of a long and successful life. There is always danger in allowing certain standards of performance to become the rule, and each project should be carefully evaluated in terms of the existing circumstances, rather than determined by rigid preconceived minimums or maximums.

CAPITAL REQUIREMENTS

I have purposely deferred consideration of the determination of capital required to provide the fixed assets and working capital necessary to operate at the levels established by our objectives until last because, prior to our merger with General Dynamics Corporation on June 30 of last year, this was quite a different problem from what it is today. We formerly had to take into consideration the availability of funds for our business, the extent to which we could obtain credit, long-term and short-term, and the relative costs thereof, the extent to which we should resort to equity issue and the proper timing of these.

Now we have access to considerably more capital, so our concern is not with how to raise it but how to justify our needs as against other divisions of the corporation, and here is where return on investment becomes more and more important. Incidentally, I am convinced that this is one of the major reasons why large corporations have a better over-all return on investment than the smaller ones; namely, that, generally speaking, the larger the corporation the more places there are to put funds to work and the wider the choice.

It is only natural, therefore, that on the average, the corporation's money is going to be put to work where it will bring the best return, whereas many smaller companies are confined to the fields in which they now operate, relatively locked in or limited in choice with respect to where they can put their money to work—if they have it—to best advantage.

I doubt if this could be classified as a scientific discussion of the problems and techniques of long-range industrial planning, but I hope I have been able to suggest a few ideas and lend some emphasis to the increasing importance of long-range industrial planning in doing business under today's—and tomorrow's—conditions.

The Controller's Role in Collective Bargaining

(Continued from page 317)

cents-per-hour or other convenient measure. Statistics on employe turnover, productivity, etc. should be available, together with pertinent comparisons of these figures with industry-wide or national figures. The company's sales, costs, and profits—whether revealed to the union representatives or not—are of course vital reference material for the company negotiator.

INTERPRETER OF FACTS

But facts, to be meaningful, must be interpreted. It is in this sphere that the controller makes another important contribution—perhaps his most important—because the interpretation placed on the facts may reach beyond the conference room to influence investors, competitors, and customers. For this reason the controller, as a policy maker, should be a key figure in deciding what facts are to be presented; and he should interpret them so clearly that erroneous impressions do not take root.

Participating in collective bargaining calls forth the controller's highest executive and analytical abilities. Busy though he is, it behooves him to give it a proper place in his thinking and in the activities of his office.

To fulfill his function at the bargaining table or at some grievance session, he must be ready to provide data, to interpret data, and to take part in negotiations. The controller who begins to collect and evaluate data for next year's bargaining the day after this year's contract is signed has recognized the fact that he is a key figure in labor negotiations.

* * *

RELATED READING: Paul Haase, "The Controller's Interest in Labor Negotiations," THE CONTROLLER, May 1950.

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Los Angeles, Calif.

20th ANNIVERSARY

The Los Angeles Control of Controllers Institute observed its 20th Anniversary at a dinner at the Palos Verde Country Club on April 19. Among the festivities marking the occasion was the "crowning" of the Control's current representative on the national Board of Directors of the Institute, Fred H. Brown, as "King of the Day." Surrounding "King" Brown, who is vice president of Macco Corporation, Paramount, California, are fellow members who have served as presidents of the Los Angeles Control.

In the closeup picture, Rudy Ostengaard (*left*), Los Angeles Control president, and Paul Haase (*right*), managing director of Controllers Institute, register their enjoyment of the introductory response to John R. Lavinder (*center*), president of the San Francisco Control, who extended greetings from that group.

LEFT BELOW

At the May 17 meeting of the Los Angeles Control the third annual award of scrolls in recognition of merit was made to graduates in accounting at University of Southern California, Los Angeles State College, Loyola University, and University of California at Los Angeles.

Seated in the front row are students: (*Left to right*) Owen G. Fiore, Loyola University; George S. Bucher, University of Southern California; Joseph L. Rubin, Los Angeles State College; Kenneth L. Just, University of California at Los Angeles.

Standing (*left to right*): Raymond O. Hill, chairman, Education Committee (CIA); Prof. Paul D. Grosch (Loyola); Prof. Foster James (USC); Prof. George N. Francis (LA State); Dr. A. B. Carson (UCLA); Control President Rudolph Ostengaard (CIA).

Billiard Balls *(Continued from page 300)*

Method 1-A

(Submitted by Robert A. Stringer, assistant controller, General Foods Corporation, White Plains, N. Y.)

(1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12)

A B C

1. Weigh A against B. If they balance, odd ball is in C and can be identified by setting aside ball (12) and weighing (9) and (10) against (11) and (1).
   a. If they balance, odd ball is (12), and whether it is heavier or lighter can be determined by weighing against any other ball.
   b. If they do not balance as follows—

   (11) (1)
   (9) (10)

   then the odd ball is (9) or (10) and is heavier, or is (11) and is lighter; weigh (9) against (10)—if they balance, odd ball is (11) and is lighter—if they do not balance, the heavier of (9) or (10) is the odd ball and is heavier.
   c. If they do not balance as follows—

   (9) (10)
   (11) (1)

   then odd ball is (9) or (10) and is lighter, or is (11) and is heavier; weigh (9) against (10)—if they balance, odd ball is (11) and is heavier—if they do not balance, the lighter of (9) or (10) is the odd ball and is lighter.
2. If A and B do not balance, then odd ball is in A or B. (We will assume that A is heavier than B. With slight modification, following steps will apply to opposite assumption.)
3. Set aside (4), (7) and (8), and weigh (1), (2) and (5) against (3), (6) and (9).
   a. If they balance, odd ball is either (4) and is heavier, or is (7) or (8) and is lighter; weigh (7) against (8)—if they balance, odd ball is (4) and is heavier—if they do not balance, the lighter of (7) or (8) is the odd ball and is lighter.
   b. If they do not balance as follows—

   (3) (6) (9)
   (1) (2) (5)

   then odd ball is either (6) and is lighter, or is (1) or (2) and is heavier; weigh (1) against (2)—if they balance, odd ball is (6) and is lighter—if they do not balance, the heavier of (1) or (2) is the odd ball and is heavier.
   c. If they do not balance as follows:

   (1) (2) (5)
   (3) (6) (9)

   then odd ball is (3) and is heavier, or is (5) and is lighter. Weigh either one against any other ball.

Total balancings—three.

Method 1-B

(Submitted by "The Abbot," Abbott Ball Company, Hartford, Conn.)

STEP I

Balance balls 1, 2, 3 and 4 (left pan) and 5, 6, 7, 8 (right pan)
Possibilities:

A. They balance—therefore balls 1, 2, 3, 4, 5, 6, 7, and 8 are standard. Either 9, 10, 11, or 12 is IT.
B. Left pan rises—therefore 9, 10, 11 and 12 are standard and 1, 2, 3 or 4 is light
   or 5, 6, 7 or 8 is heavy.
C. Left pan drops—therefore 9, 10, 11 and 12 are standard and 1, 2, 3 or 4 is heavy
   or 5, 6, 7 or 8 is light.

STEP II

Possibility A

Balance balls 1s, 2s and 3s (left pan) and 9, 10, 11 (right pan). (Note s—standard balls)
Possibilities:

1. They balance—therefore, ball 12 is IT.
2. Left pan rises—therefore 9, 10, or 11 is IT and heavy.
3. Left pan drops—therefore 9, 10, or 11 is IT and light.

Possibility B

Balance 1, 2, 3, 5 (left pan) and 4, 9s, 10s, 11s (right pan)
Possibilities:

1. They balance—therefore 6, 7 or 8 is IT and heavy.
2. Left pan rises—therefore 1, 2, or 3 is IT and light.
3. Left pan drops—therefore 5 is IT and heavy or 4 is IT and light.

Possibility C

Balance 1, 2, 3, 5 (left pan) and 4, 9s, 10s, 11s (right pan)
Possibilities:

1. They balance—therefore 6, 7 or 8 is IT and light.
2. Left pan rises—therefore 4 is IT and heavy or 5 is IT and light.
3. Left pan drops—therefore 1, 2 or 3 is IT and heavy.

STEP III

Possibility A-1

Ball 12 is IT. Balance with any other ball to determine whether 12 is heavy or light.

Possibility A-2

Balance 9 (left pan) and 10 (right pan)
Possibilities:

a. They balance—therefore 11 is IT and heavy.
b. Left pan rises—therefore 10 is IT and heavy.
c. Left pan drops—therefore 9 is IT and heavy.

Possibility A-3

Balance 9 (left pan) and 10 (right pan)
Possibilities:

a. They balance—therefore 11 is IT and light.
b. Left pan rises—therefore 9 is IT and light.
c. Left pan drops—therefore 10 is IT and light.

Possibility B-1

Balance 6 (left pan) and 7 (right pan)
Possibilities:

a. They balance—therefore 8 is IT and heavy.
b. Left pan rises—therefore 7 is IT and heavy.
c. Left pan drops—therefore 6 is IT and heavy.

Possibility B-2

Balance 1 (left pan) and 2 (right pan)
Possibilities:

a. They balance—therefore 3 is IT and light.
b. Left pan rises—therefore 1 is IT and light.
c. Left pan drops—therefore 2 is IT and light.

Possibility B-3

Balance 4 with standard ball.
Possibilities:

a. They balance—therefore 5 is IT and heavy.
b. 4 rises—therefore 4 is IT and light.

Possibility C-1

Balance 6 (left pan) and 7 (right pan)
Possibilities:

a. They balance—therefore 8 is IT and light.
b. Left pan rises—therefore 6 is IT and light.
c. Left pan drops—therefore 7 is IT and light.

Possibility C-2

Balance 4 with standard ball.
Possibilities:

a. They balance—therefore 5 is IT and light.
b. 4 drops—therefore 4 is IT and heavy.

Possibility C-3

Balance 1 (left pan) and 2 (right pan)
Possibilities:

a. They balance—therefore 3 is IT and heavy.
b. Left pan rises—therefore 2 is IT and heavy.
c. Left pan drops—therefore 1 is IT and heavy.

Method 2

(Submitted by A. R. Seder, vice president, Association of American Railroads, Washington, D. C.)

Divide the 12 billiard balls into two groups, Nos. 1 to 6 and 7-12.

First weighing

Place Nos. 1-3 in one pan and 4-6 in the other. If there is balance, obviously the off ball is in group 7-12. If the pans do not balance, the off ball is in group 1-6. Assume the off ball is thus found to be in group 1-6.

Second weighing

Place Nos. 1-3 in one pan and 7-9 in the other. Nos. 7-9 are standard. Therefore, if there is balance, the off balls are obviously in group 4-6. Assume there is not balance. Then the off ball is in the group 1-3. If the pan containing Nos. 1-3 is lighter than 7-9, then the off ball is lighter than standard, and vice versa. Assume group 1-3 is heavier; then we know the off ball is either 1, 2, or 3, and is heavier than standard.

Third weighing

Place No. 1 in one pan and No. 2 in the other. If they balance, then No. 3 must be the off ball and is already known to be heavier. If they do not balance, then the heavier of No. 1 and No. 2 is the off ball.

All above assumptions are alternatives; if the reverse results appear in any weighing the same procedure would be applied to the other balls in the particular group.

For instance:

First weighing

Nos. 1-3 and 4-6 balance. Hence the off ball must be in the 7-12 group.

Second weighing

When Nos. 7-9 and 4-6 (known to be all standard) are put in pan assume we find the scale does not balance. Therefore the off ball is either 7, 8, or 9. Nos. 4-6 are noted to be heavier than 7-9. Thus it follows that the off ball, either 7, 8, or 9 is lighter than standard.

Third weighing

Put 7 and 8 on the scales. If they balance, then No. 9 is the off ball. If they do not balance then the lighter of Nos. 7 and 8 is the off ball.

Method 3

(Submitted by J. E. Cotter, Audit and Control, Behr-Manning Co., Troy, N. Y.)

It soon appeared that basically, with three balancings, six groups can be balanced. Because of the necessity for determining whether the off-set balance was heavier or lighter, further analysis indicated that each individual ball must be on a pan at least twice. This leads automatically to 24 divided by 6, or a conclusion that each group on a pan must of necessity have four balls.

Once having arrived at this intuitive deduction, it was merely a question of systematically arriving at six groups of four so that no two balls would appear together in any two groups of four; also, that no attempt was made to balance a ball against itself since this was physically impossible. A systematic placing of the ball numbers in sequence (avoiding these two conditions) can produce a number of solutions, as you pointed out.

As a matter of interest, two of these solutions are given below:

A.—	1	4	6	9	vs.	2	5	8	12
	1	7	10	12	vs.	3	5	9	11
	2	4	7	11	vs.	3	6	8	10
B.—	4	6	9	3	vs.	5	8	12	2
	12	7	10	3	vs.	5	9	11	1
	4	7	11	2	vs.	6	8	10	1

With the balls taken and balanced in these groupings, there will be two groups that are either both heavier or both lighter than the groups against which they are balanced. An examination of these two groups will show that there is only one numbered ball commonly contained within the two groups, that is the ball and the balancing of the groups indicating whether or not it was heavier or lighter than the other balls.

Method 4

(Submitted by L. Merle Hoffman, assistant secretary and division controller, Ohio Seamless Tube Division of Copperweld Steel Company, Shelby, Ohio)

Place ball No. 1 in one pan of the balance scales, ball No. 7 in the other. Continue with No. 2 in the first pan, No. 8 in second, No. 3 and No. 9 etc. until scales are out of balance. The odd ball will be one of the pair which caused the scale to go out of balance. Place those two balls on one pan of the scales, any other two on the other pan. This will determine whether the odd ball is light or heavy. Place one of the two suspected balls on each pan of the scales. This will identify the odd ball.

The Operating Budget

(Continued from page 312)

INTELLIGENT PLANNING TO ACHIEVE BUDGETED RESULTS

Intelligent planning by a company to achieve its budgeted results and its long-term profit objective requires specific and definite short- and long-term programs which will result in the actual accomplishment of the desired results. In drawing up such a program, objectives should be established for each product or product line in terms of share of market, sales volume, costs, and operating profits and, in addition, required assets, turnover, and return on assets. While the period for which long-term objectives are set is dependent upon the nature of the company's business, it is most common to find a five-year period in use. The fifth year ahead is re-established each year so that objectives set in 1955 are for the year 1960, in 1956 for 1961, and so on.

Before a budget can be prepared on a short-term basis, the long-term objectives must first be established. In conjunction with the establishment of long-term objectives, a supporting program should be prepared which will develop a source of specific projects for execution which, in the aggregate, will reasonably assure the achievement of the long-term objectives. The term "supporting program" means a specifically scheduled plan of action designed to improve the performance of a business from its present level of performance to that stated in the long-term objective.

An example of the desirability of such a program would be an instance where the profit margin is unsatisfactory because of the location of the plant, obsolescence of equipment, or unfavorable labor conditions. The steps required to correct this situation would be a specific project that would be definitely planned as part of the supporting program to bring about the required improvement in the company's profits.

Such programs identify the problems which must be overcome and specify what action is required, who is responsible for the action, and when it will be initiated. In measuring the effectiveness of any of these programs, and closing the gap between present performance and the company's goal, the effect of the sales, profit margin and asset relationship is constantly analyzed to see that they are achieving their objective.

The supporting programs will resolve themselves into:

1. Sales-increasing programs
2. Cost-decreasing programs
3. Asset-minimizing programs

The sales-increasing programs will cover the usual factors associated with increasing sales, such as adding new lines, product changes, improvement of distribution methods, etc., and the cost-decreasing program will include plans for reducing both direct and indirect costs.

The asset-minimizing program will provide for a review of product lines to eliminate low-volume items, improvement in the manufacturing cycle to minimize work-in-progress inventories, inventory-control methods to reduce stocks of parts and finished products, and development of programs to assure optimum utilization of fixed assets.

FOLLOW-UP AND EXECUTION

Each one of these programs must be specifically docketed for follow-up and execution—and must indicate the results expected from it in the succeeding year for incorporation into the budgets. If they are based upon increasing sales volume, additional working capital will be required for inventories, accounts receivable and expenditures either for the replacement of obsolete equipment or for plant expansion.

It will be necessary to prepare, in conjunction with the operating budget, a supporting cash budget that will indicate the needs of the company for additional capital, so that plans can be prepared to

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make sure that it is available as and when it is required.

Estimates of manpower needed to carry out the company's objectives must also be made and programs initiated well in advance for the training and development of the proper personnel to execute the plans. Too many companies have taken it for granted that personnel of the type and calibre required by them will always be available when needed. Successful management today is not making any such assumptions and is giving top priority to supporting programs of a very definite and positive nature that will assure the availability of personnel to meet its future requirements.

If these steps in the preparation of the budget are consistently followed, the reference to it becoming a blueprint of a company's future actions should be clearly evident. The budget is no longer an estimate by the financial officer of the probable earnings of the company for the succeeding year, but is a summary of the plans of every individual who bears management or supervisory responsibility for the part his function will play in achieving the company's basic objectives. Whether or not it relates to sales, production, capital or manpower, it brings all these facets of the company's operations together so that they become a coordinated and comprehensive plan for future action.

Full recognition of the importance of sales forecasting as the basis for budget and profit planning is often lacking. Needless to say, the greater the accuracy that is achieved in sales forecasting the better the use that can be made of the budget as a means of control over facility, inventory, production, manpower and expense programs. This is especially true in the preparation of the short-term budget which usually covers the company's fiscal year. Forecasts which are either too high or too low have an equally adverse effect on profits and return on investment. If they are too high, excessive spending is the result and, if too low, full advantage of the profit potential of increased volume is not obtained.

BUDGET STANDARDS

Once the forecasted volume of sales has been determined, all elements of cost involved in the production and distribution of these sales should be prepared from budget standards. It is common practice to set such standards based upon historical data and personal judgment. Gross profit margins are usually set upon past experience and anticipated price levels. Stand-

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The Operating Budget

(Continued from page 341)

ards used for the control of manufacturing and many sales and administrative expenses are established by applying historical data and deriving a curve which best satisfies the points plotted. This method is usually referred to as "scatter chart" technique. Less sophisticated methods than these are often used and constitute nothing more than superficial judgment based upon recent trends and ratios. If the individuals preparing the budgets are under pressure to lower costs, such figures are often reduced by an arbitrary percentage in the hope that, by some good fortune and careful watching, the estimates submitted can be met.

In the never-ending struggle to lower costs and improve the quality of products, industrial engineers in the modern plant are constantly striving to improve processes, introduce new equipment and perfect the work flow. In each step of the production process, standards of performance are established so that on completion of the product a soundly engineered standard cost is known. If proper budget standards—particularly of factory expenses—are to be developed, it is necessary to determine them in this same manner and do away with the guesswork and rationalization involved in our older methods. Actually, when historical data are used, a foreman or supervisor who has been performing efficiently must operate within a tight budget allowance, while a less efficient foreman or supervisor receives budget leeway to perpetuate his inefficiencies. In such cases, actual performance against a budget allowance is no indication of the relative performance of the two individuals. In fact, should budget standards be arbitrarily decreased each year on the theory that such decreases reflect normal improvement in operations, the efficient foreman or supervisor, already operating within a tight budget, will appear to lose control, be unfairly judged by management and consequently lose confidence in the budget program.

The basis of all sound control systems is the determination of standards representing the best performance which can be practically expected of an operation. Such standards constitute a yardstick against which actual performance can be compared and performance controlled by determining why it varies from standard and then taking timely and appropriate action. Elimination of the serious deficiencies in arriving at budget allowances through the historical approach can best be accomplished through the introduction of budget allowances based on budget standards engineered to meet the following conditions:

1. Be based on analysis and measurement
2. Reflect most efficient usage practicable
3. Be readily convertible into dollars through application of an activity indicator
4. Be sufficiently flexible to accommodate changing "mix" of production when this factor is important
5. Differentiate between fixed and variable expenses
6. Apply through a fairly broad range of activity levels.

The fulfilment of the above conditions for each expense account is known as an engineered budget standard. It is, of course, recognized that it would not be practicable to make such a detailed analysis of many accounts where the values charged to them are unimportant. Experience will show that a very high percentage of the total of controllable expenses charged to accounts will represent a much smaller percentage of the number of accounts involved. The setting of these standards for factory expense accounts requires the application of well-established industrial engineering techniques such as time study, methods analysis, computation of manpower requirements through job content analysis, and the setting up of objectives as to what constitutes a reasonable work load under a given set of conditions.

Budget standards for staff and administrative departments covering the quantity and quality of their manpower and expense allowances should be determined through careful analysis of tasks to be performed, programs planned or under way, work flow, consolidation of functions and establishment of normal work loads. These standards can best be set by department supervisors with the assistance of systems and procedures analysts—particularly where complex procedures are involved.

A systematic analysis should be made of the number of direct sales personnel required to adequately service a company's customers and realize the sales objectives set as a result of market studies. Adequate yardsticks should be developed to measure the effectiveness of individual sales performances which would include a comparison of direct sales costs both with the dollar volume of sales obtained and the margin of profit realized on such sales. Clerical and other administrative costs of the sales department would be analyzed in the same manner as other staff and administrative department costs.

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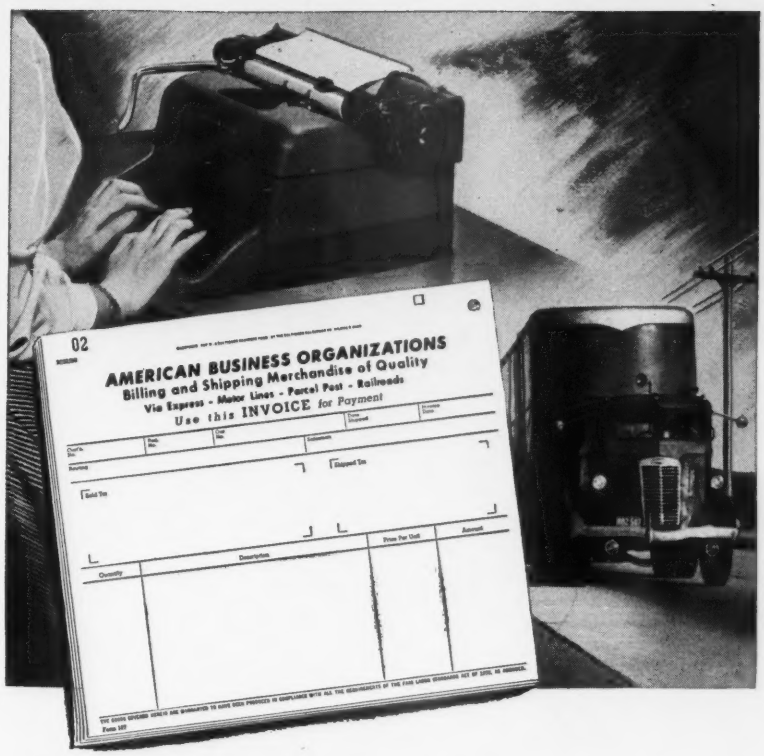
The operating budget, in its final form, is compiled by applying standard or other product costs to the forecasted sales volume, together with the application of the engineered and other budget standards to this volume of business. Budget standards when applied to the forecasted activity level indicate the expense needs of the company for the budget period. The profit results are related to the capital investment and the return-on-asset ratio calculated. This is then compared with the company's return-on-asset objective. Where the forecasted profit ratios are not satisfactory and do not meet the company's basic objective, the operating plans as reflected in the budget should be carefully reconsidered; they should not be changed, however, unless there is a specific and definite justification for the change, which can be supported by planned action on the part of the operating staffs in order to realize these amended forecasts.

For the purposes of exercising expense control, the budget standards should be applied periodically to the actual production in the period under review in order to arrive at the actual budget allowance based upon this level of activity. This budget allowance when compared with actual expenditures reflects the extent to which budget standards have been exceeded and, if the differences are significant, explanations should be required from the individuals involved. In the case of factory personnel such as foremen, simple reporting methods should be devised which will keep them informed on a daily—and certainly no more than weekly—basis as to the extent to which their actual expenditures might be getting out of line with their budget allowances. In the case of other administrative personnel, control measures should be introduced which will assure management that wage, salary and other important elements of expense are controlled, so that they do not exceed the approved budget allowance and that this control is exercised before the money is spent—and not after.

One last word about the use of budgets and what to expect from them. Budgeting by itself will not create efficiency, reduce costs or solve any basic corporate problems. Budgets cannot be used as a substitute for management and good common sense. At their best they only represent an orderly, systematic approach to management in bringing into focus its basic problems, forcing consideration of the steps which must be taken to solve them and presenting an orderly and efficient manner in which the company's affairs can be administered. The budget cannot, and will not, take the place of initiative, drive and sound business judgment which must be constantly exercised in the operation of all businesses. Businesses are operated by people and cannot be any better than the sum total of their collective efforts.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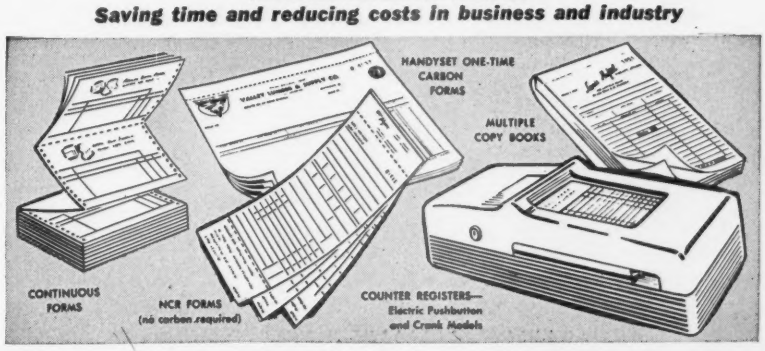
HANDYSET ONE-TIME CARBON FORMS
MULTIPLE COPY BOOKS
CONTINUOUS FORMS
NCR FORMS (no carbon required)
COUNTER REGISTERS— Electric Pushbutton and Crank Models

Research Notes

State Tax Search

Twenty-five states now are in the midst of tax studies, according to the Tax Foundation. Sixteen of the studies are comprehensive surveys of state tax structures, while nine take up specific tax problems. Total state tax collections rose 46 per cent from 1950-1955, but states as a group still cannot make ends meet.

This Electronic World

The Aviation Supply Office of the U. S. Navy, in Philadelphia, Pa., is using an IBM 702 to insure that Navy planes all over the world have parts that they need. The 702 receives reports from each of the stocking points as to materiel on hand, records of where each plane will be for the next several months, and how often each part is actually used.

The 702 processes the information and tells the field men what they will receive to meet their demands, where it will come from, and where surpluses should be shipped. Previously, when this was handled on conventional punched card equipment, it took an average of 90 days from the time the man in the field sent in his report until he got his answer. With 702, the complete cycle averages 43 days and it is anticipated that it can be shortened to between 20 and 25 days.

•

Teleregister Corporation will install a completely automatic electronic savings bank system in Howard Savings Institution, Newark, N. J. The system employs magnetic storage drums and tapes to control accounts, print passbooks, display uncleared check conditions, and "lock up" in the event of an overdraft. A bank teller, with this system, can have access to central inventory showing the status of any account, at any time, instantaneously on demand.

•

Burroughs Corporation has developed a device that "electrographically" prints characters at speeds ranging up to six miles an hour, or more than 5,000 characters per second, depending on how many are "packed" into the machine.

Burroughs has been assigned by the Air Force to develop and produce prototypes of an electronic computer for advanced missiles. Utilizing transistors, magnetic cores, and other paraphernalia, the computer is intended to further the effectiveness of ballistic devices.

•

A Western Union Intrafax private wire system is being used by the Pennsylvania Railroad to provide two-way facsimile communication between the Pennsylvania and any subscriber. Each subscriber will be equipped with a compact sending and receiving facsimile machine about the size of a typewriter. The railroad expects to interest more than 100 of its biggest customers in subscribing to the service at $55.00 a month.

•

Pan American World Airways has an IBM 705 which is being used to do the entire passenger revenue accounting task in 125 hours, a job that used to require more than 4000 hours of machine time each month. Operated by only three people instead of 58 who ran the battery of older machines, the 705 will run through the night without supervision on information fed into it just before the close of the business day.

The first IBM 705 to be used in the transportation industry is shown being demonstrated by John S. Woodbridge, seated, controller of Pan American World Airways, to Geoffrey W. Helm, manager of the company's new data-processing center at Long Island City.

Retirement Incentives

Wm. Wrigley, Jr. Company, the chewing gum maker, has a normal retirement age of 65 for its employes, but permits employes to work past that age. Those working past 65, however, must take a one-month leave of absence without pay in the first year, a two-months leave in the second year, and so on.

While the potential retirement income is increased each year that retirement is delayed, the employe finds that the enforced leave of absence without pay makes the retirement income, including social security payments, exceed what he would make by staying on the job.

Foreign Investments in U. S.

At the end of 1954, according to Commerce Department data, direct holdings by foreigners in the U. S. totaled nearly $4 billion, up $1.4 billion, or 54%, from the figure for the end of 1947. These data exclude portfolio holdings of U. S. securities.

Retirement Policies

One bank vice president who supervises $2 billion in pension plans says that one half of the last 100 plans he has set up now provide a flexible rather than a fixed retirement age. Five years ago, three quarters of all plans under his direction provided a mandatory retirement age.

Other trends disclosed in a recent survey indicated that more companies are raising the age limit in their retirement plans and more companies are inaugurating preretirement programs to teach their workers how to adjust financially and emotionally to retirement.

Automation at Work

Mass production of the electric induction motor in the seven and one-half to 30 horsepower range is possible on an almost completely automated basis at the new GE plant in Schenectady, N. Y. The new plant uses push-button controls to machine, assemble and test induction motors. With the exception of the section where motor windings are inserted, the assembly line is almost fully automatic and there is an 80 per cent reduction in manufacturing time for the motors.

An instrument company has designed a fully automatic cigarette factory for one of the nation's major tobacco companies. The projected factory would use nucleonic (atom ray) gauges to check cigarette quality, automatic sorters to reject misfits, electronic feed-back devices to automatically correct machine controls and automated materials-handling systems to tie operations together. Many cigarette factories today have various kinds of automatic equipment and the next step is to link the equipment together and use machines to run the machines.

Recruiting Scientists and Engineers

An oil company, D-X Sunray, permits children of Sunray employes to embark on experimental projects in the research laboratories. Two evenings a month, the young people are turned loose in Sunray laboratories to work on projects of their own choosing. Sunray supervisors stand by but usually do little except answer questions.

Sunray officials say that the program has been successful in encouraging high school students to think seriously of studying science or engineering in college. They plan to continue the program in the fall on the same schedule.

Credit for College Credits

The Tuition Plan, Inc., a wholly owned subsidiary of CIT Financial Corporation, has announced a plan that will enable parents to finance up to four years of school or college for their children under a single installment contract. The plan also includes life insurance on all parents under 60 years of age.

Stock Ownership

Some eight per cent of family spending units own common stock, according to the 1955 Survey of Consumer Finances, while 6.5 million (4.2 per cent of the total population) were estimated to own stocks according to the 1952 Brookings Institution report. Comparison of types of individual savings for 1951 shows that 66 million people had time deposits, 12 million had savings and loan accounts, 86 million people had life insurance, while seven million had common stocks.

CONTROLLERSHIP INFORMATION SERVICE

A summary of information developed by CONTROLLERSHIP FOUNDATION *in answer to inquiries from a number of readers of* THE CONTROLLER

COMPENSATION TO MEMBERS OF BOARDS OF DIRECTORS

Type of Enterprise	*Closely Held*	*Approx. Net Worth (Mill.)*	*Approx. Net Annual Sales (Mill.)*	*Approx. No. of Employes*	*Fees Paid per Meeting*			*Expenses Reimbursed*		*Remarks*
					"Outside" Directors	*Director-Executives*	*Attendance at Meetings Required*	*"Outside" Directors*	*Director-Executives*	
1. Publishing	yes	9	—	600	$100	no	yes	yes	yes	Actually all board members are local residents
2. Non-Profit Association	yes	2	4	280	no	no		no	no	
3. Mining & Metal Products Manufacturing	yes	2	32	2600	yes	yes	yes	no	no	
4. Baking	yes	2	8	500	$100	$100	yes	no	no	
5. Instrument Manufacturing	yes	2	9	540	none	no		none	no	
6. Building Materials Manufacturing & Wholesaling	yes	2	8	350	$50	no	yes	no	no	All directors local people
7. Publishing	yes	3	8	210	none	no		no	no	All directors either executives or stockholders
8. Chemical Manufacturing	no	3	5	2000	nominal	nominal	yes	no	no	
9. Textile Manufacturing	yes	4	5	500	no	no		no	no	All directors either executives or stockholders
10. Export Sales	yes	2	10	70	no	no		no	no	All directors are executives of corporation
11. Motion Picture	wholly owned subsid.	4	8	500	$50	no	yes	yes	no	Expenses paid by parent company
12. Textile Manufacturing	yes	6	10	650	no	no		no	no	All directors either executives or stockholders
13. Sewing Machine Manufacturing	yes	5	7	800	$50	no	yes	yes	yes	
14. Metal Products Manufacturing	yes	2	9	500	$25	no	yes	yes	yes	Expense reimbursement only for long-distance travel
15. Electric Machine Manufacturing	yes	1	8	400	$25	$25	yes	no	no	
16. Rubber Manufacturing	wholly owned subsid.	3	4	340	$20	no	yes	no	no	"Outside" directors are actually employes of parent company
17. Building Material Manufacturing	yes	3	8	400	yes	yes	yes	no	no	A director's fee: $\frac{\$40 \times \text{no. of board members}}{\text{no. in attendance}}$
18. Metal Product Manufacturing	yes	4	10	800	no	no		no	no	
19. Machinery Manufacturing	yes	2	5	600	$50	$50	yes	no	no	
20. Food Processing		.5	2		$50	$50	yes	no	no	All board members local residents

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RIGID, PERMANENT, INEXPENSIVE
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Chem-Board Storage Files are permanent. They cost and weigh about 50% less than steel; cost less than some corrugated paper files. They're shipped assembled, ready for use.

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Personal Notes

PROMOTIONS . . .

W. E. Clough was recently made auditor (controller) of the United States Tobacco Company, New York. . . . **Harry P. Schrank,** production vice president of Seiberling Rubber Co., Akron, Ohio, since 1936, was elected executive vice president of the company. . . . **Richard D. Windatt** is now vice president of Penn-Texas Corp., New York. . . . **Vincent G. McDonagh** was recently made secretary and treasurer of Charles Bruning Company, Chicago, Ill.

Wilson K. Minor has been elected comptroller of Standard Oil Company of California, San Francisco. Mr. Minor is a former national director and regional vice president of Controllers Institute: he is currently serving as a trustee of Controllership Foundation, research arm of Controllers Institute. . . . **W. H. Johnson** is now executive vice president of Lone Star Steel Company of Dallas, Texas.

ADDITIONAL DUTIES FOR . . .

Stuart B. Miller who is now vice president and comptroller of Fansteel Metallurgical Corp., North Chicago, Ill. . . . **Donald E. Noble,** secretary and treasurer of the Wooster Rubber Company, Wooster, Ohio, who is also vice president in charge of finance. . . . **Martin Rasnow** who is now vice president and comptroller, Benrus Watch Co., New York.

NEW CONNECTIONS . . .

Robert E. Baker, Jr., former manager of Ernst & Ernst's Management Service Division in Houston, Texas, is now vice president-operations and a member of the Board of Directors of General Gas Corporation, Baton Rouge, La. . . . **Edward J. Kocis,** principal in the Newark, N. J. office of Haskins & Sells, is now treasurer and a member of the Board of Directors of Breeze Corporations, Inc., Union, N. J., and vice president and a director of its wholly owned subsidiary, Federal Laboratories, Inc. . . . **Edward Sautter,** who has been with Ex-Cell-O Corporation for 15 years, recently became controller of Michigan Tool Company, Detroit. **Robert W. Ferguson** of the same company was made assistant secretary and assistant treasurer.

Ralph A. Lorini is now controller of the Roosevelt Hospital, New York. . . . **Edwin H. Crichley** has rejoined the Parker Appliance Company, Cleveland, Ohio, as comptroller. Mr. Crichley had been assistant comptroller of Parker Appliance from 1949-1954. . . . **Irving Marcuse** is now controller of the Atlantic Design Company, Newark, N. J. . . . **Robert W. Browning** is now assistant controller of Chas. Pfizer & Co., Brooklyn, N. Y. . . . **Harold S. Geneen** has joined the Raytheon Manufacturing Company, Waltham, Mass., as executive vice president. . . . **Jess J. Tope** has been elected controller of Hagan Corporation, Pittsburgh, Pa.

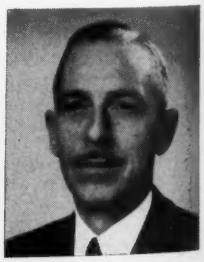
NEW DIRECTORS . . .

David McGilvray, vice president of the Fyr-Fyter Company, New York. . . . **Christian E. Jarchow,** executive vice president of International Harvester Company, Chicago, Ill., to the Board of Rudolph Wurlitzer Co., Chicago. Mr. Jarchow served as national president of Controllers Institute, 1947-48.

MR. CRICHLEY

Deakin

MR. GENEEN



MR. MINOR

COMPANY CHANGES . . .

Consolidated Natural Gas Company of New York has announced the following elections: **Herbert C. Johnson,** vice president and treasurer and **Arthur E. Gartner** to the new office of controller. **Walter C. Kronke** was appointed assistant controller.

EXTRACURRICULAR ACTIVITIES . . .

James B. Pollard, secretary and treasurer, Colonial Stores, Inc., Atlanta, Ga., has accepted appointment on the Committee on Taxation and Spending of the Georgia State Chamber of Commerce.

HONORS TO . . .

LEFT ABOVE

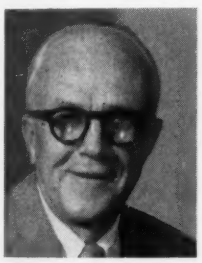
Robert N. Wallis, president of Controllers Institute of America and treasurer of Dennison Manufacturing Company, Framingham, Mass., who was the honored guest at a meeting on May 18 of the Columbus Control, at the Scioto Country Club, following his participation as chairman of a session at the 18th Annual Institute of Accounting at Ohio State University. During Mr. Wallis' trip to Columbus, he was also made an honorary member of the Omicron Chapter of Beta Alpha Psi.

In the photograph above Mr. Wallis is second from the right. With him are the following members of the Columbus Control: *(left to right)* Merle E. McLeod, controller, Hercules Galion Products, Inc.; F. William Kahrl, controller, The Cooper-Bessemer Corp.; Paul R. Langdon, controller, Battelle Memorial Institute; and R. E. Gregory, president of the Control and director of Management Reports and Controls, Nationwide Insurance Companies.

RIGHT ABOVE

In this picture taken at the initiation ceremony of Omicron Chapter of Beta Alpha Psi at the Ohio State University on May 18, are *(left to right)*: Karney A. Brasfield, assistant to the Comptroller General, Washington, D. C., and president of the American Government Accountants Association; Charles R. Israel, treasurer of Aero Mayflower Transit Company, Indianapolis, Ind., and president of the National Association of Cost Accountants; and Robert N. Wallis, treasurer, Dennison Manufacturing Company, Framingham, Mass., and president of Controllers Institute of America. Russell T. Antrim, president of Omicron Chapter of Beta Alpha Psi, is making the presentation.

Beta Alpha Psi, incidentally, national honorary accounting fraternity, was organized through the interest and help of A. C. Littleton, this year's Accounting Hall of Fame winner (see THE CONTROLLER, June 1956, page 288).



MR. TOERGE

MR. H. JOHNSON

MR. GARTNER

. . . **H. Oscar Donner** is serving as special assistant on the Committee of American Industry of the National Fund for Medical Education. . . . **Earl A. Matheney, Sr.,** controller and secretary, Jenkins Music Company, Kansas City, Mo., has been elected president of the Kansas City chapter of the National Association of Cost Accountants for 1956-57 and, in addition, carries the duties of president of the Kansas City Association for the Blind, and the Kansas City Tax Club. He served as the 1955-56 president of the Kansas City Control of Controllers Institute.

SPEAKERS . . .

William R. Phelan, controller, United States Fidelity and Guaranty Company, Baltimore, Md., addressed the 24th Annual Conference of the Insurance Accounting and Statistical Association in May 1956. His subject was "Management Reports—Large Companies."

George E. Toerge, who was honored at the Small Business Day at the Ninth Annual Southern California Business Show of NACA at Los Angeles. His company, Standard Steel Corporation (of which he is controller-treasurer), was named "the most outstanding of successful small businesses" and Standard's president, **Robert S. Burns,** stated "the controller's office shares a large portion of the responsibility in charting and determining the course of the expanding business. In a business such as ours," he continued, "where items are engineered to customer needs, 'cost data' are of extreme importance and without effective and reliable cost data we would be hopelessly lost with the increased business."

Obituary

HARRY L. NEAL, 46, vice president, Century Industries Corporation, Burbank, California, died on May 19, 1956.

EDWARD E. REARDON, 55, controller of the Budd Company, Philadelphia, Pa., died at his home on May 25, 1956. Mr. Reardon had been with the Budd organization since 1915, starting as an office boy. He became auditor of the company in 1936 and controller in 1943.

★ OPPORTUNITIES ★

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CONTROLLER

Six and one-half years performing controllership functions for medium-sized manufacturing companies; four years public accounting experience. Comprehensive, balanced background. Good organizer and administrator. Progressive and practical. Understands management problems and can develop the financial planning and cost controls you need. CPA, age 35, excellent health. Box 2222.

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desires a position that can utilize administrative and industrial cost "know-how." Extensive experience on a supervisory level in accounting systems and procedures; government contract procedures and negotiation conferences. Age 36. New York vicinity. Box 2224.

CONTROLLER OR ASSISTANT

Fourteen years of diversified experience; now assistant controller large manufacturer—supervision taxes, budgets, auditing, cost, IBM, procedures, insurance, etc. CPA, B.S., age 35. $15,000. Box 2225.

INSURANCE ADMINISTRATOR

Currently employed by multiplant manufacturer, with domestic and foreign subsidiaries, devoting my full time to insurance management and pensions. Eight years with present employer. Fully experienced in developing a well-rounded program by negotiating "tailor-made" policies for all types of business insurance. My previous experience as chief accountant is very helpful with present assignment. Age 44. Married with children. Box 2227.

CONTRACT COST ACCOUNTANT

Aggressive government audit supervisor with extensive experience in CPFF, price redetermination, termination of government contracts, and review and installation of cost accounting systems desires position with dynamically growing company on long-term basis. College graduate with postgraduate studies in controllership. Age 35. Will relocate. Box 2228.

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OFFICERS AND DIRECTORS OF CONTROLLERS INSTITUTE meet with guests at Western Conference. Seated clockwise: **Edwin W. Benson,** president, Portland Control, and assistant secretary-treasurer, Interstate Tractor and Equipment Co.; **W. Carl Carlson,** office manager and chief accountant, Westminster Paper Company, Ltd., Vancouver; **Roger A. Yoder,** secretary-treasurer, Detroit Steel Corp.; **John A. Paterson,** comptroller, The Brooklyn Union Gas Co., New York; **Ronald L. McVey,** senior vice president, Tennessee Gas Transmission Co., Houston; **Donald P. Jones,** comptroller, Sun Oil Co., Philadelphia, Pa.; **Harry C. Hahn,** comptroller, Wisconsin Telephone Co., Milwaukee; **Charles H. Gordon,** vice president, Seattle-First National Bank.

Robert N. Wallis, president, Controllers Institute; **C. R. Fay,** chairman of the board, Controllers Institute; **Paul Haase,** managing director, Controllers Institute.

Stuart W. McLaughlin, treasurer, Controllers Institute and comptroller, West Virginia Pulp and Paper Co., New York; **Fred H. Brown,** vice president, Macco Corporation, Los Angeles; **Murray S. Gelber,** vice president and manager, AiResearch Manufacturing Co. of Arizona; **Joseph C. Huehn,** comptroller, American Brake Shoe Company, National Bearing Division, St. Louis; **C. C. Lay,** treasurer, The Wheland Company, Chattanooga; **John S. Sturgeon,** vice president and treasurer, The Magnavox Company, Fort Wayne; **Dudley E. Browne,** comptroller, Lockheed Aircraft Corporation, Burbank; **Charles J. Kushell, Jr.,** vice president-finance and administration, Revlon, Inc., New York; and **James A. Beaman,** president, Phoenix Control, and controller, The O'Malley Lumber Co., Phoenix.

Western Conference CIA *(Continued from page 322)*

A whole new technology is developing around these materials which only a few years ago were little understood and believed to be worthless. The West has a virtual monopoly of many of these minerals.

"Financial resources have flowed west in large quantities within the last few years to support the development of new technologies and overlooked opportunities. Much more is needed. Inadequate capital could be the most important single limiting factor in over-all western growth."

Mr. Greene concluded by noting that industrial dispersion has given the West many new plants in response to national defense policy. This merely accelerated a movement already under way in American industry to meet purely economic and sociological criteria in terms of greater employe satisfaction and efficiency, escape from congestion and air pollution, pleasanter living all around. With or without government prodding or financial assistance this trend is well established.

Other speakers on the program were: Ralph F. Lewis, national director of management services, Arthur Young and Co., New York, whose subject was "The CPA Views Mechanized Accounting"; Philip W. Geary, assistant director, Air World Education, Trans World Airlines, Inc., New York, who spoke on "Socrates and the Air Age"; and Herbert A. Leggett, vice president and economist, Valley National Bank, Phoenix, who discussed "Arizona's Place in the Western Economy."

A panel on electronic data processing was headed by Richard G. Canning, partner, Canning, Sisson & Associates, Los Angeles, Calif. The panel members were John Haansdra, engineer, IBM Laboratory, San Jose, Calif.; Charles W. Clark, division planning manager, AiResearch Manufacturing Company, Los Angeles; and C. L. Terrel, Systems and Procedures Department, Consolidated Vultee Aircraft Corporation, San Diego, Calif.

Robert N. Wallis, president of Controllers Institute and treasurer, Dennison Manufacturing Co., Framingham, Mass., presided at the opening luncheon while C. R. Fay, chairman of the Board of Directors of Controllers Institute and vice president and controller, Pittsburgh Plate Glass Company, Pittsburgh, Pa., presided at the closing luncheon. Other presiding officers were: Edwin W. Benson, president, Portland Control and assistant secretary-treasurer, Interstate Tractor & Equipment Co., Portland, Oregon; John O. Yeasting, president, Seattle Control and vice president-finance, Boeing Airplane Co., Seattle, Wash.; John R. Lavinder, president, San Francisco Control and assistant secretary and assistant treasurer, California Packing Corporation, San Francisco, Calif.; and Rudolph Ostengaard, president, Los Angeles Control and vice president, California Bank, Los Angeles, Calif.